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# The Ciudad Lineal of Madrid\*

GEORGE R. COLLINS Columbia University

THE tendency of towns to form themselves along arteries of transportation is an ancient and a natural one. The 'highway town' is a well-known phenomenon. Such an arrangement, in which a town, city, or region is extended longitudinally along a roadway, waterway, or railroad system, we call linear.

As with other simple urban devices of the past, like the gridiron or the radial plan, this arterial arrangement has usually proven itself inadequate to cope with the tremendous urban expansion and congestion that have come about in modern times. The endless 'ribbon' development of houses facing on a busy thoroughfare has produced intolerable living conditions on the outskirts of our cities. In the United States it has been observed that this blight is extending over large regions. Owing in part to motorcar transport, American cities are spreading across the landscape in vast interconnected streamers, consuming valuable farm land between towns and producing enormous super-cities that stretch virtually uninterrupted for great distances along highways. Concern has been expressed outside of professional planning circles: in early 1957 the American press observed that the area between Boston and Washington has become essentially one single 'strip city' of about 1,500 miles extension.<sup>1</sup>

\*This and a succeeding article are intended as a brief chronicle and bibliographic study of linear methods of planning. The author is preparing a book on the subject. He has been aided by a travel grant from the Columbia University Council for Research in the Humanities during the summer of 1958.

1. Typical studies of the problem in the press were a series of lengthy first-page articles in *The New York Times* beginning with 'Rise of the Urban Region: A Study of New Way of Life', on 27 January 1957, continuing for eight days through 3 February; and in the *U. S. News and World Report*, 'Cities as Long as Highways—That's America of the Future', XLII, 5 April 1957, pp. 27–31. J. Walter Thompson Co.'s pamphlet, *Interurbia: The Changing Face of America* (New York, 1957), is another popularized presentation of the matter.

Recently the editors of *Fortune* magazine have done much to arouse concern over this problem with a professional symposium and by a series of articles in co-operation with *The Architectural Review*

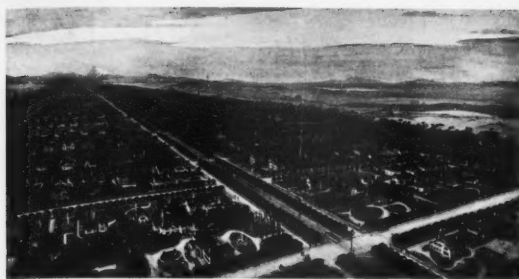
That the linear deployment of cities along transportation routes could have a beneficial rather than a baleful effect has, on the other hand, been the basis of a number of modern planning theories, beginning with that of the Spaniard, Don Arturo Soria y Mata, who wrote on 6 March 1882, in the columns of *El Progreso* of Madrid, that the ideal 'almost perfect' type of city would be 'a single street unit 500 meters broad, extending if necessary from Cadiz to St. Petersburg, from Peking to Brussels'. Today the editors of *The Architectural Review* (October 1958) suggest that 'cities two hundred miles long and two miles wide' are one solution to urban sprawl in the United States. 'And the vast new 41,000-mile programme of state highways . . . could be the string for a chain of self-contained new towns . . .'

Soria (1844–1920) was the first of a series of planners who have relinquished the conventional city nucleus for an extended type of regional plan which assumes that surface transportation is such a basic organizational factor in modern living that we must arrange ourselves and our activities along its routes. Others have followed suit, notable among them the architects of the first Russian Five-Year Plan (1928– ), the British MARS group (1937–1942), and in the 1940s Ludwig Hilbersheimer, and Le Corbusier with his ASCORAL associates. Frank Lloyd Wright's Broad-acre regional plan of the 1930s would also seem to fall in this category.<sup>2</sup> Although his direct influence cannot be proven in each of these cases, Arturo Soria y Mata clearly

of London that have been reprinted as *The Exploding Metropolis* (Garden City, N. Y., 1958). Chapter v, 'The Urban Sprawl', by William H. Whyte (who collaborated in the J. Walter Thompson publication) is most interesting in this connection.

*The New York Times* returned to the subject with another first-page series on suburban sprawl and transport problems on 2 to 4 March 1959.

2. These and other lesser known linear projects are discussed in the second part of this study.

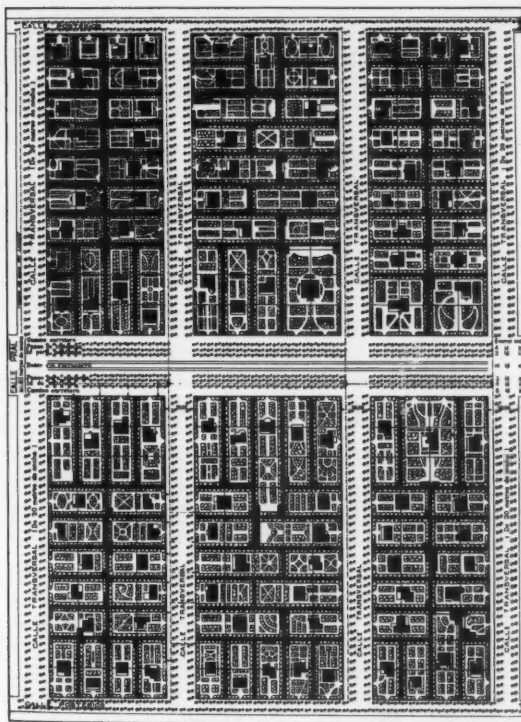


1. A Ciudad Lineal showing its central avenue prolonged indefinitely and its isolating zone of woods at the sides (from *El Futuro Madrid*).

preceded them and seems to have been the inventor of modern linear planning. Not only did he first enunciate the principles of linearism in the 1880s, but from the 1890s he actually administered a pilot project, the Ciudad Lineal of Madrid, and for some thirty-five years he and his successors published a periodical *La Ciudad Lineal*, which was devoted to urbanism in general and to his linear theory in particular.

Soria's concept of linear planning was more or less as follows: the axis, or 'backbone' as he would call it, of his layout was to be a single principal street of 40 meters' width and of indefinite length (figs. 1-4). This was to be intersected at 300-meter intervals by secondary streets of 20 meters' width, forming large super-blocks of 40,000 to 60,000 square meters' area. The principal street was to have tracks to be employed by trolleys during the day and by freight cars at night. The large blocks were to be subdivided into moderately priced lots. Buildings would be of modest height, separated from each other by masses of vegetation and from the street by a compulsory five-meter strip of greenery. Large lots for wealthy homes faced on the main thoroughfares, lesser residences were to be on the cross streets, and the smallest houses on parallel secondary streets behind (fig. 2), but essentially the rich and the poor were to live in close proximity in Soria's new town.

The center spaces of certain large blocks were to be devoted to workshops, stores, markets, barracks, churches, theaters, museums, schools, and the like. Kiosks were planned at intersections on the principal street to serve as police posts, waiting rooms, refuges, etc. Under the streets were to be conduits for drainage, water, electric cables, heating pipes, etc., and several parallel rows of shade trees were to run the length of all streets. The city would be, then, a broad band of about 500 meters' breadth extending endlessly and joining together in a vast network the old obsolete 'point-cities' of the past (fig. 4). Soria's plan anticipated a number of the features of Ebenezer Howard's later Garden City, such as the insulating zones of vegetation



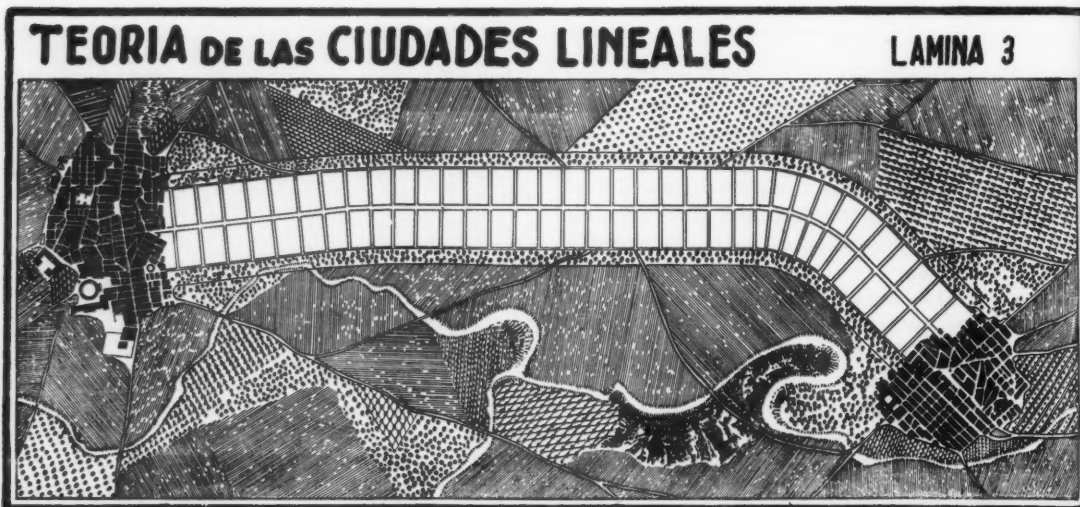
2. Arrangement of streets and lots, Ciudad Lineal, Madrid (from *Datos acerca de la Ciudad Lineal*).

and the low-density individual holdings. 'For every family its own house, for each house an orchard and garden', was Soria's slogan. Property prices, he observed, would not fall off in a radiating manner from extremely expensive center points, but would lower gradually from central street to nearby side street areas.

The idea of linear planning came to Soria in the 1880s while he was engaged in writing a column, 'Cosas de Madrid', for the Madrid daily *El Progreso*. This newspaper, organ of the Zorrilla faction of Spain's Progressive Republicans, was devoted to administrative reform, and Soria's articles dealt with a wide variety of social, political, and administrative ills. His emphasis was frequently on the congested and unhygienic state of living conditions in Spain's capital city. He wrote on the historical development of cities, on the means of widening the main streets of Madrid by a system of forced expropriation, and on the need for trees as 'the lungs of great cities'. He criticized the backwardness of Spain with regard to electric power and light, steam heat, and telephone; and he pointed to the advantages of elevated and underground railway lines as they were being developed abroad. His emphasis was always on the human, organic character of the city, which he compared in its growth to a living organism. He cus-



3. Typical cross section of a Ciudad Lineal (from C.M.U., *Guía*).



4. Schematic representation of Ciudad Lineal as a regional plan, connecting two old cities and insulated by woods (from González del Castillo, *Las Poblaciones Lineales*, Santiago de Chile, 1929).

tomarily described his Linear City as a vertebrate animal.

The concept of the Ciudad Lineal itself was developed in his column from time to time during the years 1882–1883. The first article of this nature appeared on 27 February 1882 and dealt with 'La línea recta', the straight line in planning. It was Soria's precept then, later largely repudiated by his movement, that the straight line was prime—being economical, geometrical, moral, democratic, etc. (It should be noted that Ebenezer Howard's original scheme was also a geometrically rigid one.) On 6 March 1882 appeared his fundamental thesis in a short article entitled 'Madrid remendado y Madrid nuevo'. He called for a single linear street, 500 meters wide and infinitely long, with provision for railway, tramway, and utilities in the middle, flanked on each side by a residential zone of houses scattered through garden plots. It was here he enthused that such a Linear City could stretch

from Cadiz to St. Petersburg, from Peking to Brussels; this catchy simplification of his ideas has adhered like a trademark to his theory, and has at times, perhaps, diverted attention from his more fundamental reforms. On 10 April 1882 Soria repeated his basic ideas with considerable amplification in an article headed 'La Ciudad Lineal', and introduced the slogan, 'Ruralizar la vida urbana; urbanizar el campo', which brings to mind later English Garden City maxims. The culminating article appeared on 5 March 1883, approximately one year after his first mention of linear planning. Under the title 'La cuestión social y la Ciudad Lineal', he inveighed against the vertical growth of cities, the lack of privacy in dwellings, the absence of decent housing for workers. He asked why those who believe in 'un gran arquitecto' for the universe, and in architects for houses, cannot see the need for a master plan for the City. He suggested that the rural environ-



ment of a Ciudad Lineal with its isolated separate holdings would inevitably eliminate many of the social ills brought on by modern urban congestion.<sup>3</sup>

Arturo Soria y Mata was well qualified to speak on these matters to his fellow Spaniards. To begin with, his education had been a scientific one. He had worked in the field of communications, had invented telegraphic apparatus, and had tried (in vain) to introduce the telephone to Madrid. He had passed an exciting period (1866-1873) in politics as a radical republican, an experience which had brought him into personal contact with progressive political figures and had introduced him to the obstacles to reform in nineteenth-century Spain. Furthermore, the fundamental basis of Soria's new city planning was that of a network of transportation: he had himself launched one of the first tramways of Madrid eight years before and was still its director. And, finally, Soria felt himself to be personally involved in the unhealthy conditions of cities because he had lost one of his children, 'victim of urban congestion', in Madrid.<sup>4</sup>

For nearly a decade after the appearance of his articles in *El Progreso* the idea of the Ciudad Lineal simmered quietly in the mind of its inventor. In 1883 he ceased writing for the journal, and in 1886-1887 he sold his interest in his streetcar company after ten years of its operation, in part because he could not bear the conservatism of his fellow directors. With the profits of this sale he bought and moved to the Quinta Mahudes, an historic residence in outlying Chamartín de la Rosa, near the north end of the tract of the future Ciudad Lineal of Madrid. It is not clear at what point he began to survey the vicinity for his linear settlement, but in his personal library there was a pamphlet analyzing the water resources of his valley which he had apparently studied before buying terrain there for a Ciudad Lineal.<sup>5</sup> However, his researches of this period were set aside when in 1889 he was called abroad for the government, and from 1890 on occupied various governmental positions in Spain.<sup>6</sup>

3. Arturo Soria helped publish *El Progreso* for several years, beginning in 1881. His articles have been reprinted, with editing, at various times. The handiest source is an anthology which contains items printed between 14 January 1882 and 22 October 1883, that was published by his family on the fifteenth anniversary of his death: Arturo Soria y Mata, *Cosas de Madrid: Apuntes y comentarios municipales* (Madrid: Imprenta Augusto Boué Alarcón, 1935).

4. Stressed in the introduction to his lecture at the Ateneo Científico y Literario de Madrid in 1894. See note 8 below.

5. Joaquín Jiménez Delgado, *Aguas artesanas, subterráneas y corrientes en la provincia de Madrid* (Madrid, 1865), with Soria's own marginal checks in the portion dealing with the Alcalá de Henares valley.

6. Earlier in 1871-1873 as an administrative official in Puerto Rico and as a Puerto Rican delegate to the Spanish Cortes he had worked for the emancipation of the slaves in that colony. In 1889 he held posts in Cuba and Puerto Rico.

In 1892 Soria began to put his theory of the Ciudad Lineal into effect, and there ensued a number of years of intense activity. The events can be closely followed in a series of his publications of this period. Soria was an astute publicist, and also he believed passionately in the principle of keeping his ideas, actions, and account books constantly in the open for public scrutiny—a rare quality. On 21 August 1892 the concession for his railway that was to encircle Madrid and to serve as the core of his Ciudad Lineal was printed in the official *Gaceta de Madrid*. On 3 October he published a large pamphlet entitled *Ferrocarril-tranvía de circunvalación de Madrid* which described in great detail the theory and the practical details of the Ciudad Lineal and announced the sale of shares in a Compañía Madrileña de Urbanización which would carry out the plan (fig. 5).<sup>7</sup>

This pamphlet, dedicated to his former teacher and associate in the political events of the 1860s, Manuel Becerra, gives a clear picture of Soria's original thesis, unmodified by the later suggestions of his sons, his directors, and his many collaborators and correspondents in Spain and abroad. The pamphlet recounts the origin of his ideas in 1882 and his current proposals. It describes his petition to the Ayuntamiento to allow a subterranean terminus in the center of Madrid for his access line into town. He sets forth the arrangement of lots in the Ciudad Lineal and points out the many advantages of his new community. Technical data on the construction of the railway and financial details of the new Company were included. In his conclusion he points out that besides the Ciudad Lineal itself and the subterranean station, he considers his original contributions to be the sharing of the same tracks by freight trains and passenger trolleys, and his amortization of the Company's obligations by serial number instead of by lot as was customary.

Then for two years Arturo Soria sought to draw large Spanish capital into his enterprise. His efforts were in vain, and he was limited to the peddling of shares to small investors. This inability of the Company to attract large capital funds at the outset created a serious situation, often commented upon in later years. Original capital funds permitted the development of only a fraction of the intended fifty-five kilometers, and later the Company found that, owing largely to the effect of its own project, land values had risen so high in the area that it was impracticable to purchase the terrain to extend the Ciudad Lineal as far as it had originally been planned. Nevertheless, Soria solicited testimonials from eminent Spanish

7. [Arturo Soria], *Ferrocarril-tranvía de circunvalación de Madrid & Canillas, Hortaleza, Fuencarral, Vicálvaro, Vallecas, Villaverde, Carabanchel y Pozuelo: Datos y noticias referentes a su construcción y explotación* (Madrid: Est. Tipográfico 'Sucesores de Rivadeneyra', 1892).

citizens and societies, delivered two important public lectures on his theories,<sup>8</sup> and supervised the organization of his Company. His efforts at this time to arrange certain details of his project with the municipal government of Madrid, such as the subway terminus, were followed closely in the city's press. Newspapers took sides, with democratic ones like *El Heraldo* and *La Correspondencia de España*, as well as engineering journals, supporting Soria against the intransigence of the Ayuntamiento. Far away in Paris *Le Figaro* heard about it and commented, 'M. Soria is of the school of Baron Haussmann, but he encounters, as so many others have, the eternal obstacle of the municipal council of Madrid, always refractory with regard to the beautification of the city.'<sup>9</sup>

Finally on 16 July 1894, amidst considerable pomp and numerous speeches, the works of the Ciudad Lineal were inaugurated and the cornerstone of the first house was blessed by the archbishop of Madrid-Alcalá. The ceremonies were reported in detail in an important volume of fascicules published in September of that year under the title of *La Ciudad Lineal—Antecedentes y datos varios acerca de su construcción*.<sup>10</sup> The first fascicule consisted of a detailed exposition of Ciudad Lineal theory. There followed a description of the dedicatory program of 16 July with its speeches representing the various points of view of lawyer, worker, *empleado*, and others, all printed in full. Then came a series of writings describing the community's security system, the military value of the project, a sample worker's house, etc. There were printed the opinions, pro and con, that Soria had been soliciting with regard to his *Ferrocarril* pamphlet. Most impressive recommendations came from the Real Academia de Ciencias, the Junta Municipalidad de Sanidad, and a group of a dozen Madrid doctors. Characteristic of the unimaginative attitude of his critics was the letter from the Sociedad Geográfica de Madrid reproving him for proposing the construction of a railway through an area not yet settled, which was precisely Soria's purpose! Monthly balance sheets and the minutes of all meetings of the directors to date made up the final fascicules of the publication. A progress report therein reveals that by 7 September 1894 the land of the first *barriada* had been bought and divided, water had been contracted for, fencing started, and rail construction was under way.

8. Arturo Soria y Mata, *Conferencia dada en el Fomento de las Artes el día 13 Enero de 1894, acerca de su sistema de urbanización* (Madrid: Imprenta a cargo de Juan Cayetano García, 1894). *Idem*, *Conferencia dada en el Ateneo Científico y Literario de Madrid el día 14 de Mayo de 1894 acerca de 'La nueva arquitectura de las ciudades'* (Madrid: Est. Tipográfico 'Sucesores de Rivadeneyra', 1894). Both are reprinted in Soria, *Cosas de Madrid*, pp. 185–240.

9. *Le Figaro*, 7 February 1894.

10. Compañía Madrileña de Urbanización, *La Ciudad Lineal: Antecedentes y datos varios acerca de su construcción* (Madrid: Est. Tipográfico 'Sucesores de Rivadeneyra', 1894).

On 5 October 1895 *La Dictadura*, first organ of the Company, began publication on Soria's own press in the Quinta de Mahudes. This weekly, in newspaper format, described itself as a 'Periódico Monárquico', and although subsidized by the Company, it was essentially a personal instrument of Soria's, through which he expounded his own political and philosophical theses. When, in late 1896, a group of his dissident councillors tried to oust him as director of the Company on various grounds, he survived the crisis with the aid of his eldest son Luis, but his board refused to continue the subsidy for the periodical. *La Dictadura* ceased publication 19 December 1896.

In May 1897 the fortnightly *revista*, *La Ciudad Lineal*, was launched by the Company in order to continue publishing its accounts and actions. It was entitled 'órgano oficial' of the Company and carried on its masthead the following description of intent:

The objective of the Compañía Madrileña de Urbanización is to create in the environs of Madrid comfortable, hygienic, and economical quarters in the form of the Ciudad Lineal, where it would be possible to combine country life with proximity to the business center and to the necessities of modern life. This will be for all social classes, and most especially for those whose standard of living does not permit them to live at great distances and to acquire costly vacation places, and who are thereby condemned to live forever confined to the narrow precinct of the streets of Madrid, breathing the vicious and enervating atmosphere of a conglomeration of population.

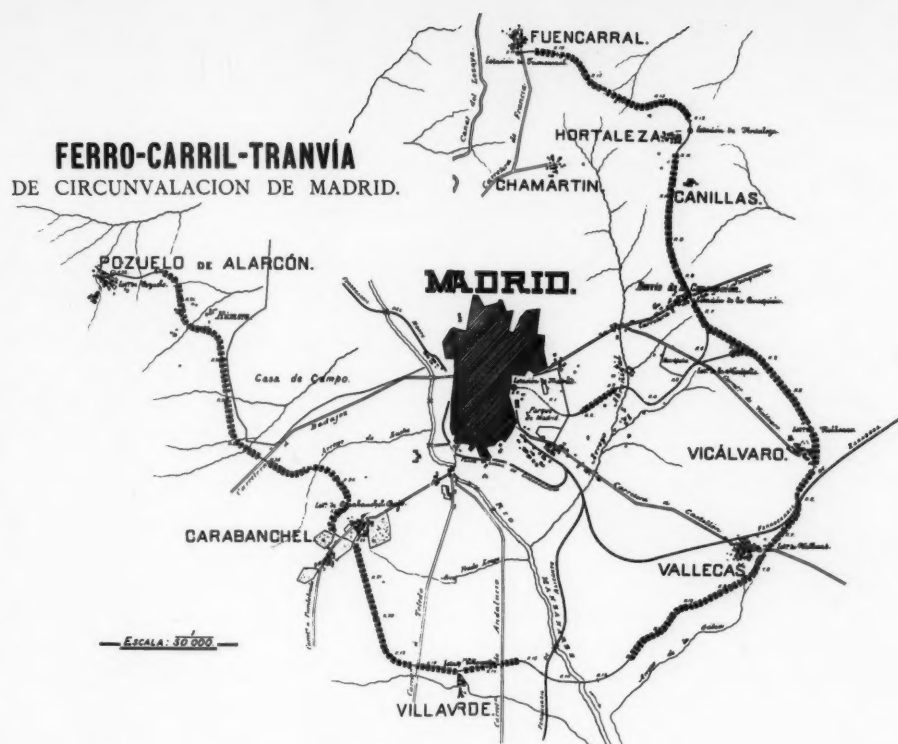
The aim that the Company pursues carries with it, as a business enterprise, the development of all the public utilities which are related to its major aim, such as the buying and selling of lots, the construction of edifices, the manufacture and selling of building materials, the supplying of water and light, the establishment of streetcar lines, and other means of locomotion and transportation.

The Company installed a printing press in the Casa de Máquinas of the Ciudad Lineal and circulated 4,000 copies of the periodical—at first free. They planned to profit from its advertising and from job printing. The press did in time become an important part of the whole enterprise, and *La Ciudad Lineal* soon developed into a magazine of quite general interest with an international circulation.

Although the formulation of the linear city was Soria's own, certain of its elements were related to the preliminary work of his associates and acquaintances. He frequently cited in this regard the doctoral thesis of Julián Massó on urbanization and public hygiene published about 1874. Dr. Massó was later one of the Madrid medical men who supported Soria in the testimonials of 1893–1894, but as a councillor of the Company he was one of the three who moved to oust Soria as director in 1896–1897. Also in 1885 the architect Mariano Belmás, who later as a board member of the Company was to design its first house, published a leaflet *Mi Casa* which Soria termed 'the most perfect that has been written on the matter of inexpensive

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5. Map of Soria's fifty-five-kilometer railway circling Madrid and flanked by Ciudad Lineal settlements (from Soria, *Ferrocarril-tranvía*).

construction'.<sup>11</sup> In 1892 Fermín Hernández Iglesias, first president of the board of the Company, had lectured on the construction of inexpensive and hygienic workers' houses in the Círculo de la Unión Mercantil of Madrid. This concern with low-cost workers' housing must be understood to have been at all times a primary feature of Ciudad Lineal theory, and it was exactly this aspect that whetted the interest of two of its most enthusiastic adherents abroad—Carlos Carvajal and Guillermo Bañados, of Chile, who will be discussed later. In fact, our first notice of Carvajal is in a letter to Soria published in *La Ciudad Lineal* in 1907,<sup>12</sup> in which that Chilean engineer asked assistance in obtaining copies of Señor Belmás' publications.

11. Soria, *Ferrocarril-tranvía*, p. 13. Belmás, who was director of the *Revista de Arquitectura* and secretary-general of the Sociedad General de Arquitectura de España, wrote and spoke frequently on economical house construction. He had immediately recognized the merits of Soria's scheme when he saw the concession published in the *Gaceta de Madrid* and wrote enthusiastically about it in *La Correspondencia de España* on 10 September 1892, before he had made Soria's acquaintance.

12. *La Ciudad Lineal*, año XII, no. 314, 10 August 1907, pp. 338-339.

The chronicle of the Ciudad Lineal, of the Sorias, and of their close associates from these beginning years down to the present moment makes a fascinating story of man's devotion to an ideal and his co-operation in a struggle against overwhelming odds. Local public apathy and official bureaucracy were but two of the several problems which beset the enterprise and above which it rose, at times, to periods of financial success and to moments of international importance in the city-planning profession. But war, world economic crisis, or less dramatic adversity struck, like Nemesis, time after time just when the Ciudad Lineal was showing the greatest promise of achievement in Spain and abroad.

For instance, with regard to the projected Ciudad Lineal in the environs of Madrid certain reductions in plan were found to be necessary at the outset. The original intent of the Compañía Madrileña de Urbanización was that a Ciudad Lineal would be developed on both sides of a railroad circuit running fifty-five kilometers from Fuencarral to Pozuelo de Alarcón and virtually ringing the city (fig. 5). The advantage of this linear city for both residence and industry would have been to have relieved slowly the pressure of congestion in Madrid itself, but without the



6. Actual layout of the Ciudad Lineal of Madrid, showing streetcar connections with the center of Madrid (from *La Ciudad Lineal: Memoria*, 1931).

intention of ever eliminating Madrid as an entity. There was to be a rail connection from the Barrio de la Concepción on the east to the Paseo del Salón del Prado in Madrid, arriving there as a subway. Thus was their project outlined in the various publications and lectures through the year 1894. However, by that time it became evident that shortage of capital would reduce the scope of the enterprise to a first section of about five kilometers extending north from Concepción (the Aragón highway) toward Fuencarral (fig. 6). Also, to take advantage of certain cheap terrain available near Chamartín, the course of the Ciudad Lineal was straightened at that time, cutting out the loop of Canillas and Hortaleza. A second section running south to Vicálvaro and a third from Vicálvaro to Valdecas were projected, and the land was purchased in 1908, but urbanization never materialized in that direction. In a sense, then, the theory of Arturo Soria was never really put to a test as a large-scale regional device, and he was left with a small experimental project, a type of garden suburb, in which only a portion of his ideas could be tried, and those mainly residential in character. But this, as we shall see, never dampened the quixotic spirit of Arturo Soria and his associates.

Soria was a remarkable figure for late nineteenth-century Spain. His was a mixture of theoretical speculation and practical activity somewhat foreign to the national character—a capitalistic entrepreneur rather out of place.

His earlier enterprises and inventions had been viewed with suspicion by public and officialdom alike; his business associates were often too timid for his taste. With regard to the failure of a low-cost housing project in Spain he once wrote, "The idea was simple and good. The complication is our national character: hard, ungovernable, incapable of agreement or of disciplined good will . . ."<sup>13</sup> With regard to his Ciudad Lineal venture, however, the outcome of his struggle with his board of directors in 1896 had been to leave control of the Company in the hands of himself and his sons, and a policy of forceful activity followed on their part.

On 28 November 1897 there was held in his new little community its first Fiesta del Arbol (Arbor Day). The purpose of this occasion was to celebrate the completion of its water system and to launch a program of planting 30,000 trees. Beginning with the year 1899 the Fiesta del Arbol became an annual spring event in the Ciudad Lineal, celebrated with games and a variety of communal activities. The importance to the Ciudad Lineal of this festival and its tree-planting is a story in itself. Despite the ravages of time and the Civil War, enough remains today of the greenery to indicate that in its heyday the Ciudad Lineal stood in sharp contrast to the rather arid, treeless

13. *La Ciudad Lineal*, año VI, no. 128, 30 May 1902, in speaking of an experiment of 1873.



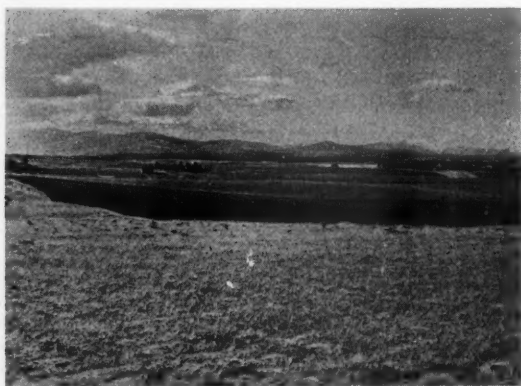
wastes of the Madrid area (fig. 7). Tree-planting was fundamental to Soria: he introduced 'before-and-after' photographs (fig. 8) into his brochures to illustrate its progress, and he considered his program to be part of the international Arbor Day movement.<sup>14</sup>

The focus of attention during the first decade of the Company's existence was on its financial survival and the slow process of construction: capital was still hard to come by. In this respect, the year 1899 was the Company's first flourishing one. It had weathered the crisis of the Spanish-American War, and it was publishing (1899, 1900) ambitious plans for industry, agriculture, a theater, a sanitarium, and even a new university in the Ciudad Lineal. Labor difficulties arose the following year, but they were settled, largely through the efforts of the eldest son, Luis Soria y Hernández. Luis became sub-director in 1902 and was the main support of his father until he left the Company eighteen years later in a family dispute over Company policies. The streetcar line through the Ciudad



7. Central boulevard of the Ciudad Lineal (calle de Arturo Soria) about 1930 (from C.M.U., *Ciudad Lineal*, 1934).

14. Apparently Arturo Soria and his friends Belmás and Massó first introduced the American institution of Arbor Day to Spain, although priority has usually been claimed by Rafael Puig y Valls, founder of the Asociación de los Amigos de la Fiesta del Arbol de Barcelona, which published a *Crónica* of its activities for many years. The Barcelona group began in 1898, but the C.M.U. had already held a Fiesta del Arbol as early as March 1896 *outside* the Ciudad Lineal in a plantation that had been secured for that purpose. The Queen Mother and two Infantas had attended the celebration.



a. Unimproved land near Madrid.



b. First tree planting, main road of the Ciudad Lineal.

8. An early illustration of the improvements made by planting trees (from *The Lineal City*).

Lineal was completed in August 1901, access to Madrid being then through Chamartín to a line (Cuatro Caminos to Fuencarral) which the Company had bought in 1898 (fig. 6). In 1904 the southern end of the Ciudad Lineal line was tied into the municipal system by the completion of the Company's tracks from Concepción to Ventas del Espíritu Santo along the Aragón highway (fig. 6). In the meantime improvements were being made in equipment. Horsecars ('tracción de sangre'!) gave way to steam power in 1905 on all lines, and in 1909 the whole system was electrified with equipment that Luis had purchased on a trip which he made throughout Europe studying the matter.

There followed a period of prosperous activity. This can be observed not only in the regularly issued financial statements, but also in the increased elaborateness of the Company's publications and in the growing international ties of the Ciudad Lineal through correspondence, participation in congresses, notices in foreign publications, and the like. In 1906, a big year, the Queen had attended the opening of the salon-restaurant of the theater of the Ciudad Lineal, and on 20 May 1912 the King himself laid the final stone of a prize house in the Ciudad Lineal awarded by the newspaper *ABC*. The first civilian airport of Madrid was established in the Ciudad Lineal; the first flights in Spain were made there in 1910 with the Royal Family in attendance. In 1914, among its various financial ventures, the Compañía Madrileña de Urbanización presented to the authorities a plan for a subway system of four lines embracing the entire city of Madrid.

Then came the first World War. Although in the end beneficial to Spain's economy, the War brought the Compañía Madrileña to the brink of ruin. Like other railway enterprises in Spain its daily income and the rate of new subscriptions to its stock failed to meet the sudden increase in material costs brought on by the world crisis. Furthermore, this came at a moment when Company funds were heavily involved in the works of its second *barriada* and in the construction of an aqueduct from the Jarama River. By 30 August 1914 the Company was forced to suspend dividends, and for many years the Sorias were engaged in the business of financial reorganization, both in the courts and on their own. Arturo Soria sold the Quinta Mahudes in order to help meet his Company's obligations. In 1915 he set up a special Ciudad Lineal loan company to help his residents to get cash, and he attempted for several years to run a lottery on houses and lots in an effort to keep the Company's construction business alive. In 1917 the periodical *La Ciudad Lineal* dropped to one issue a month because of the wartime paper shortage in Spain. In 1919 the State appointed an investigator into the business, who advised that the management be changed. In reply Arturo Soria published his own plan of reorganization and the family even offered to sell its 3,200 shares in the Company in order to raise foreign capital.<sup>15</sup> This

was apparently not necessary and with the general post-war boom, the enterprise recovered and went on to greater successes.

On 10 November 1920 Arturo Soria y Mata died, at the age of seventy-six. He was buried in the Civil Cemetery near his friend the mathematician and statesman Eduardo Benot; twenty newspapers carried obituaries, eulogies, and notices of the burial. In the rearrangement of the family enterprise that followed, the directorship went to his third son, Arturo Soria y Hernández, Luis having withdrawn from the enterprise. Sons Emilio and Carlos were made sub-director and secretary respectively. The new director had been active in politics for a number of years as *diputado* (Liberal Party) and vice-president of the *Diputación Provincial*. Since 1918 he had been behind the plan for a new Hospicio Provincial for the orphans of Madrid to replace Pedro de Ribera's old structure of the eighteenth century. In 1923, then a *Senador del Reino*, he published a book about the project which presents the new orphanage as an agricultural trade school with considerable dependence on the fresh-air-and-greenery philosophy of the Ciudad Lineal.<sup>16</sup>

By the mid-1920s the Company was recovering financially and had become the focal point of a budding international movement for the linear planning of cities. This movement may have been symptomatic of the general utopian fervor of the decade, or it may merely have resulted from the energetic pamphleteering of the promoters of Ciudad Lineal theory. In either case, the professional journals took increasing notice of the experiment in linear planning in Madrid, and a variety of projects were worked out for use abroad. It was in 1924 that a Ciudad Lineal almost became a reality in Chile, as we shall see. Georges Benoit-Lévy, the movement's most influential agent abroad, brought the plan to the attention of the League of Nations in 1924, and in 1928 founded the Association Internationale des Cités Linéaires, which was to keep the movement alive in later years when the Madrid group had succumbed to the effects of the Spanish Civil War and World War II. Substantial memoranda were published about the Madrid undertaking for the International Housing and Town Planning Congresses of Vienna (1926)<sup>17</sup>

15. Arturo Soria y Mata, *Reorganización de la Compañía Madrileña de Urbanización y engrandecimiento de la Ciudad Lineal* (Madrid: Imprenta de la Ciudad Lineal, 1919).

16. Arturo Soria y Hernández, *Un proyecto de nuevo Hospicio para Madrid* (Madrid: Imprenta de la Ciudad Lineal, 1923).

17. Arturo Soria Hernández, *The Problem of the Land in Spain in Relation with the Town and Country Planning*. International Federation for Town and Country Planning and for Garden Cities, Vienna Conference, September 1926 (Madrid: Imprenta de la Ciudad Lineal, 1926). Identical Spanish edition is included in second half of volume.

and Berlin (1931).<sup>18</sup> The period was one of prosperous expansion for the enterprise.

The final phase of our history opens with the establishment of the Republic in Spain in 1931. In that year there occurred a strike of typographers. As a result *La Ciudad Lineal* began to appear less regularly and then petered out altogether. In 1931 the Company's railroad from Vallecas to Canteras, which it had purchased many years before for the transport of building material, was sabotaged and torn up; the State refused compensation, and the line has never been put into service again. A new edition of the Company's advertising brochure was published in 1934,<sup>19</sup> but it no longer carried the imprint of the printing press of the Ciudad Lineal, and a special notice in the booklet announced that just as it had gone to print the Company decided to abandon its business of constructing houses on the installment plan. Thus two important activities of the Company, publishing and building, were coming to an end. Also in 1934, in the face of vigorous opposition by Arturo Soria y Espinosa (Luis' son) and others of the major stockholders, the Company rented its trolley lines to be operated by the Sociedad Madrileña de Tranvías, a semi-municipal corporation. The family spirit was kept alive by a memorial publication of the writings of Arturo senior in 1935,<sup>20</sup> and soon afterward by the establishment of a prize-essay contest for students in the Ciudad Lineal in the memory of its founder. In 1936, however, the director, Arturo Soria y Hernández, was done away with under mysterious circumstances, and the end of the long family saga was near. Luis had died in 1934. Carlos, who had represented the Company in various Congresses, died in 1939, and in 1940 the remaining son, Emilio, sold the enterprise out of the family. It was largely through the efforts of Custodio Redal Etayo, who represented the Company in Benoit-Lévy's International Association of Linear Cities, that contact was maintained abroad in these difficult years, even during the siege of Madrid.

Following the sale of the Company to Manuel Pereña Salvatella in 1940 it suffered considerable dismemberment. Its major railroad, a twenty-one-kilometer stretch northward to Colmenar Viejo which it had constructed early in the century, was relinquished to the State for the

new Madrid Burgos railway roadbed. Most of its unsold properties and its water rights were transferred to a new entity of Pereña's, Nuevo Madrid, S.A., which was attempting to establish a satellite town between the Ciudad Lineal and the Barajas airport to the northwest of Madrid.<sup>21</sup> When the remainder of the Company was sold to José Junquera Blanco in 1947 it still owned much of its tramways, and a handsome publication of the history of its transport published at that time suggests that it had taken a new lease on life.<sup>22</sup> However, the little suburban towns of which it had always been a part were swallowed up in the City of Madrid in the 1950s, and at about the same time the Company disposed of its remaining transport lines to the city. The Company offices are still to be found in Madrid on the Calle del Prado, but operating on very reduced circumstances, administering some of the last fragments of what was once a large and complex undertaking.

This chronicle of the Ciudad Lineal of Madrid can best be traced in the publications of the Company itself. As in the early years when Arturo Soria y Mata publicly recorded the formulation of his theories and the founding of his enterprise in Madrid, so the later events were closely documented in the Company's printed matter. Although widely distributed in their day, these materials have seldom been consulted since, and a short analysis of the major items might be in order here. Especially rewarding is scrutiny of the periodical *La Ciudad Lineal*, which was a rich source of information during its nearly thirty-five years of continuous publication.<sup>23</sup> It had started in newspaper format in 1897 as a simple biweekly house organ of the Company, publishing accounts, notices, and a certain amount of chitchat for residents of the Ciudad Lineal itself. But with the issue of 20 April 1902 it increased to three issues a month, converted to magazine format, and changed its sub-heading from 'órgano oficial' to 'Revista de urbanización, ingeniería, higiene y agricultura'. Before this date it had already published numerous articles of general interest, such as a long series on the modern use of reinforced concrete, but these now became more the rule and covered a wide range of marvelously entertaining subjects, including a column of Arturo Soria's own home-

18. Compañía Madrileña de Urbanización, *La Ciudad Lineal, fórmula española de Ciudad Jardín como sistema de arquitectura de ciudades y de colonización de campos: Memoria presentada al XIII Congreso Internacional de la Habitación y de Urbanismo* (Madrid: Imprenta de la Ciudad Lineal, 1931). Identical German edition is included in second half of volume.

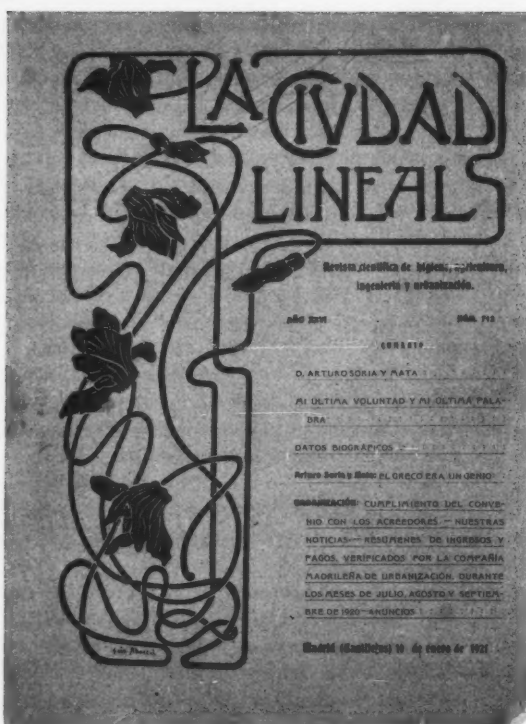
19. Compañía Madrileña de Urbanización (C.M.U.), *Ciudad Lineal* (Madrid: Helios, 1934). An earlier (fourth) edition of 1930, restricted more to the description of available house types, was still printed by the Imprenta de la Ciudad Lineal.

20. See note 3.

21. Described in *La Ciudad Satélite—Nuevo Madrid* (Madrid: Impresos Esparza, 1945).

22. Compañía Madrileña de Urbanización, *Origen y desarrollo de sus redes de transporte, 1892-1947* (Madrid: Rieusset, S. A., 1947).

23. I do not know of a complete file of this periodical in existence today. Madrid libraries and the Soria family have the only long sets which I have seen. There are, as far as I know, only six separate numbers in this country, in the City Planning and Landscape Architecture section of the Library of the Harvard University Graduate School of Design.



9. Cover of the magazine *La Ciudad Lineal* (black print on deep red paper) as it appeared from 1906 to 1924.

spun philosophy entitled 'Filosofía Barata'.<sup>24</sup> Luis Soria y Hernández and a certain Pascual Lopez were frequent contributors of serious articles on Ciudad Lineal theory, but the prime mover in this broadening of interest seems to have been Hilarión González del Castillo.

The career of Señor González del Castillo merits special attention. Identifying himself cryptically as 'consul of Spain in Nagasaki', this indefatigable worker in the cause of the Linear City spent years writing, lecturing, and travelling throughout the world on this campaign. In his writings we find the broadest and most explicit presentation of the theory, and he represented the movement in person or in writing at most of the planning congresses of the early twentieth century. By training a lawyer and diplomat, he wrote on legal subjects and occasionally collaborated with the popular playwright Emilio González del

24. See Arturo Soria y Mata, *Filosofía barata: Apuntes sociológico-científicos* (Madrid: Imprenta de la Ciudad Lineal, 1926). This book, containing a selection of 45 articles of Soria's, most of which had appeared in this column between the years 1902 and 1915, was published on the fifth anniversary of his death. It should be noted that the prologue to the volume was contributed by his friend Mario Roso de Luna, the well-known Spanish astronomer and theosophist.

Castillo on pieces for the theater. But his main output was on the linear theory of city planning. He drew up the Company's first professional report, that made in 1911 to a parliamentary commission studying colonization and repopulation.<sup>25</sup> He composed the Company's impressive memorandum of 1913 for the Scientific Congress in Madrid and for the International Planning Congress in Ghent,<sup>26</sup> as well as that of 1919 for the Reconstruction Exposition in Brussels and for the National Engineering Congress in Madrid.<sup>27</sup> He contributed considerable material for publication abroad. For many years he helped Carlos Carvajal of Chile with promotional materials in support of the latter's projects for a Ciudad Lineal in that country. His writing for the periodical *La Ciudad Lineal* began about 1900 and extended almost without break down to its final issues.

To return to the magazine *La Ciudad Lineal*, a second shift in its character had, on 10 January 1906, brought about an increase in pages, a section of book reviews, and even more scientific material. The format was redesigned in the popular Modernismo (Spanish Art Nouveau) style which was also in fashion in the architecture and decoration of the buildings of the Ciudad Lineal. This typography stayed with the magazine until the usual Classical reaction occurred in 1912, when it disappeared except for the cover (fig. 9). Offsetting this increased intellectualism of the periodical, there appeared a section, 'Vida Práctica', full of how-to-do-it and make-it-yourself articles on furniture and gadgets. The journal never lost a certain homely touch that reminds one of American rural magazines.

Between the Company's fascicules of 1894 and the year 1911,<sup>28</sup> *La Ciudad Lineal* is our sole chronicle of the enter-

25. *Informe que ante la comisión parlamentaria que entiende en el Proyecto de Ley de Colonización y Repoblación Interior presenta Don Hilarión González del Castillo* (Madrid: Imprenta de la Ciudad Lineal, 1911).

26. The same report seems to have been presented to both congresses: [H. G. del Castillo], *La Ciudad Lineal, como arquitectura nueva de ciudades: Memoria presentada por la Compañía Madrileña de Urbanización en el primer congreso internacional del 'Arte de Construir Ciudades y Organización de la Vida Municipal'* de Gante (Madrid: Imprenta de la Ciudad Lineal, 1913). At the request of the Secretary of the Ghent Congress, this material was translated into French by M. Georges Benoit-Lévy, who was thus introduced to the movement which he was later to promote with such enthusiasm. Certain revisions were made in the course of preparing the French edition, which is entitled *La Cité linéaire, nouvelle architecture de villes* (Madrid, 1913).

27. H. G. del Castillo, *Projet de Cité Linéaire Belge inspiré par la Cité Linéaire espagnole inventée par Mr. Arturo Soria y Mata: Rapport présenté à l'Exposition de la Reconstruction à Bruxelles* (Madrid: Imprenta de la Ciudad Lineal, [1919]). French translation by M. Albert Simi. *Idem, Ponencia acerca de la Ciudad Lineal y la Ciudad Jardín presentada al Congreso Nacional de Ingeniería* (Madrid: Imprenta de la Ciudad Lineal, 1919).

28. See note 10.



prise. In the latter year a rather sumptuous booklet-guide was edited for the Company by Arturo Soria junior and Angel Muñoz Crespo, first editor of *La Ciudad Lineal*.<sup>29</sup> The volume opened with a pictorial exposition of the Linear City theory. Then in turn were presented the many advantages of life in the Ciudad Lineal of Madrid and the facilities offered to residents by the Company. A variety of types and sizes of its houses were pictured with their costs, and the functioning of its transport was described. One section was devoted to a campaign that the Company waged for many years—that of obtaining public utility status from the Government. For some reason it was never able to secure this, in spite of the fact that it provided public transportation and constructed public housing on its lands; the Ciudad Lineal was always hampered by a lack of municipal or state encouragement such as obtained for similar enterprises in Great Britain, Germany, and other countries. The fact that Arturo Soria y Mata was himself an incorrigible republican and antimonarchist did not, of course, make it easy for him to extract concessions from the state.

The year 1913 was one of intense activity, especially on the part of González del Castillo. Besides his work as a board member of the Company and a contributor to *La Ciudad Lineal*, he delivered and published two series of addresses at the Ateneo de Madrid,<sup>30</sup> and prepared Company reports, among them the important one to the Premier Congrès International de l'Art de Construire Villes et Organisation de la Vie Municipale at Ghent,<sup>31</sup> which he presented to the congress in person. The Ghent report presented the story of the Ciudad Lineal with great thoroughness, summing up its theory in a series of simple principles and comparing it to other systems of urbanism. The ten principles cited by the Company as its 'Rational Architecture of Cities' are:<sup>32</sup>

4. The land should be divided so as to apportion one-fifth for houses and four-fifths for cultivated area.
5. Houses should be independent and separated: one house for each family, and an orchard and a garden for each house.
6. There should be a distance of five meters maintained between house and street.
7. Modern linear cities should be designed as connectors between the point-cities of the past, covering the countryside in vast triangulations and providing for farming and industrial exploitation alongside.
8. At difficult points where obstacles are met in the course of the development of a Ciudad Lineal it should reduce itself to the width necessary to lay its tracks and if necessary go elevated or underground.
9. The return to Nature: an exodus from cities will take place in order to settle abandoned lands, thus reversing the present danger of population movement from country to city.
10. The linear city plan will accomplish an equitable distribution of land. It is a complement to the doctrine of Henry George.

This last point illustrates the preoccupation of these planners with Spain's chronic problem: re-distribution of land. Ciudad Lineal theory is heavily imbued with the agrarian ideas of Henry George. González del Castillo frequently wrote about the American reformer in *La Ciudad Lineal* and quoted heavily from his writings in the introduction to the Ghent report.

This report also defines explicitly what are to be considered the three different uses of a Ciudad Lineal: first, to form suburbs in the enlargement of great cities; second, to connect two existing cities; third, to colonize lands that are now deserted or poorly exploited.

Although *La Ciudad Lineal* was reduced to monthly publication in 1917 it seems to have maintained considerable international circulation. During 1915–1916 there appeared on the inside cover of each issue a summary in a number of languages of the Ciudad Lineal principles and a concise statement of what were considered to be the advantages of Linear Cities over Garden Cities. The major publication of this period was a memorandum prepared by González del Castillo for the Exposition de la Reconstruction in Brussels in May 1919.<sup>33</sup> In this he presented a complete project for a Belgian linear city that could be established, with whatever local modifications might be necessary, in any of the war-damaged areas of that country. A scale model was made and shipped to Brussels to illustrate the project. Similar material was exhibited later that year at the Congress of Engineering in Madrid.<sup>34</sup>

There occur in this project some radical changes in emphasis and layout regarding Ciudad Lineal theory (fig. 10). The central avenue would be wider (sixty, not forty meters), and it would be paralleled by four other large longitudinal streets, two on each side at considerable distances from each other. The land between these avenues would

1. From the problem of locomotion derive all the other problems in urbanization.

2. The plan of the city must precede its construction.

3. Regular geometrical forms of streets and of blocks of houses are to be preferred for their fineness, convenience, and less costly nature.

29. Compañía Madrileña de Urbanización, *Datos acerca de la Ciudad Lineal* (Madrid: Imprenta de la Ciudad Lineal, 1911).

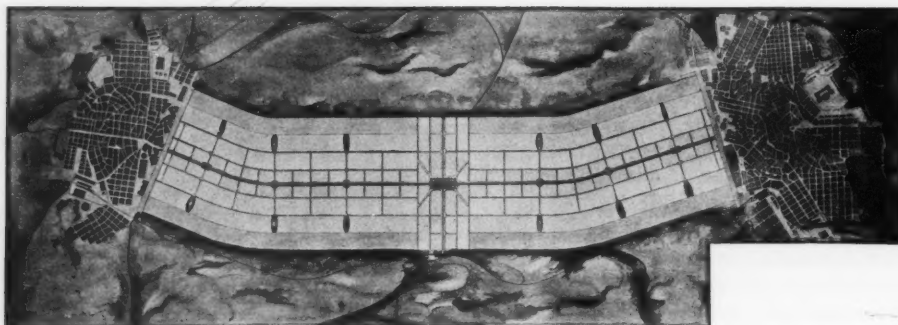
30. Hilarión González del Castillo, *Pompeya y la Ciudad Lineal: Conferencias en el Ateneo de Madrid, Febrero y Marzo de 1913* (Madrid: Imprenta de la Ciudad Lineal, 1913). And *idem*, *Ciudades Jardines y Ciudades Lineales: Conferencia organizada por el Congreso de las Ciencias y dada en el Ateneo de Madrid el 20 de Junio de 1913* (Madrid: Imprenta de la Ciudad Lineal, 1913).

31. See note 26.

32. These ten principles seem to have been worked out by Arturo Soria y Mata for the later French version of the Ghent report. González del Castillo in his original Spanish version and earlier booklets had been experimenting with such a codification of Ciudad Lineal theory. Henceforth the ten principles appeared in nearly all Company publications.

33. See note 27.

34. See note 27.



10. González del Castillo's proposed Belgian Linear City of 1919 (from *Journal of the A.I.A.*, ix, 1921).

be zoned into residential, business and administrative, and industrial areas, the land beyond them into agricultural and forested zones. The whole would form a belt city 2,340 meters wide instead of the former 500 meters. Plazas would occur at appropriate intervals, the largest being a civic center called the Forum and placed at the point where the central boulevard is intersected by a cluster of perpendicular and diagonal avenues. The main perpendicular avenue would lead to the railroad station at the outer edge of the band, indicating that the inner boulevards were to be used primarily for local transportation. Another fundamental change was the idea that, although the city would be used to connect two old cities, its residential area would be of limited extension (about ten kilometers), sufficient to accommodate 60,000 inhabitants. These modifications seem to have come about under the influence of both Garden City and Imperial Roman planning, two subjects on which González del Castillo had been writing and lecturing for some time.

In keeping with the Company's economic recovery, by 1924-1926 *La Ciudad Lineal* was running larger, with as many as thirty pages of advertisements. The format of the magazine was considerably modernized with the issue of 8 October 1924. The cover was now designed in bold solid color with an inserted photograph of a scene in the Ciudad Lineal, and the sub-heading became simply 'Revista de Urbanización—la primera en lengua española'. Following a change of editors in 1928, more illustrations of modern architecture began to appear in its pages and on its cover.

That same issue of 8 October 1924 described the visit to the Ciudad Lineal of the members of the National Housing and Town Planning Council of Great Britain the month before. A little handbook in English entitled *The Lineal City* had been prepared for the information of the guests. It was also printed in French and Spanish for distribution

as publicity.<sup>35</sup> Illustrated with plans and attractive photographs of their project, it printed the ten principles of the Linear City, presented a long comparison of Linear and Garden City methods, published some informative statistics about the Madrid colony, and appended information about Spanish housing and town planning laws.

There followed in quick succession a series of impressive publications. On the occasion of the International Housing and Town Planning Congress in Vienna in 1926, Arturo Soria y Hernández prepared a thirty-page report called *The Problem of the Land in Spain* which summarized the activities of the Company in what is probably the lengthiest publication on the Ciudad Lineal in English.<sup>36</sup> In the same year, in honor of the fifth anniversary of the death of Arturo Soria y Mata, his sons published the anthology of his writings,<sup>37</sup> mostly from his column 'Filosofía Barata' in *La Ciudad Lineal* that has been mentioned above.

Linear City theory was getting considerable attention abroad at this time. Notices of the Spanish experiment were printed in various countries, and in *La Ciudad Lineal* appeared reports about numerous foreign projects for linear cities. In 1927 the Company delivered a sharp criticism of pending plans for the expansion of Madrid in a 106-page book entitled *El Futuro Madrid*.<sup>38</sup> In the following year a

35. [Compañía Madrileña de Urbanización], *The Lineal City: Rational Architecture of Cities: Fundamental Principles of the Lineal City* (Madrid: Imprenta de la Ciudad Lineal, 1924). Also editions in French (1924) and Spanish (1925).

36. See note 17.

37. See note 24.

38. Compañía Madrileña de Urbanización, *El Futuro Madrid: Informe de la C.M.U. fundadora y constructora de la Ciudad Lineal al plan general de extensión de Madrid elaborado por los técnicos municipales Señores Núñez Granés y Casuso (ingenieros) y Aranda y García Cascales (arquitectos)* (Madrid: Imprenta de la Ciudad Lineal, 1927).

book of similar size was prepared for the city of Barcelona, which had made public request for advice on relieving its urban congestion. Entitled *La Reintegración al Campo y la Ciudad Lineal*,<sup>39</sup> the volume describes Ciudad Lineal theory in detail and includes a project for a Ciudad Lineal in the environs of Barcelona that González del Castillo had proposed in *La Ciudad Lineal* in 1921.

Two types of publicity booklets were being published in these years, of substantial size and richly illustrated. One type, called *Guía de la Ciudad Lineal*, was just that, a hand guide. After some fifty pages of copiously illustrated theory, the facilities of the community are minutely described and located, and a thirty-four-page street guide of personal addresses follows.<sup>40</sup> The other variety of booklet, a publicity brochure of about fifty pages entitled *Ciudad Lineal*, contained material similar to the data book of 1911,<sup>41</sup> somewhat abbreviated and in more up-to-date format. This went through several editions, the most striking being that of 1934 (fig. 11).<sup>42</sup>

The last important publication on city planning theory by the staff of the Compañía Madrileña de Urbanización was its report to the International Housing and Town Planning Congress in Berlin in 1931.<sup>43</sup> Apparently composed by González del Castillo, it gave a résumé of the whole movement from the date of Arturo Soria's first articles in *El Progreso*. It is one of the most objective publications dealing with our subject, pointing to such flaws in the original theory as the insistence on straight line planning, the exaggerated emphasis on the length of the city with its consequent destruction of community activities, and the lack of an agricultural and forested zone along the city's flanks. Irregular streets, parks, perpendicular arteries, large public squares, and a modern zoning system are all among those modifications dating from the Belgian plan of 1919 that are here accepted as part of the modern theory. Some fifty pages of the book are devoted to a discussion of the international reputation that had been attained by Soria's theories and of the many Linear City projects being considered throughout the world. This report illustrates the close relationship that had developed between Linear City and Garden City theory. Here, as had been the case for some time, the Ciudad Lineal is referred to as a Spanish type of Garden City. For many years pub-



11. Illustration from a page of the 1934 publicity brochure showing an up-to-date residence in the Ciudad Lineal.

lications of the Spanish movement had included systematic comparisons of Linear City and Garden City theory, and the theme of the 1931 report seems to be that there are two types of Garden Cities—the English satellite type and the Spanish linear type.

The magazine *La Ciudad Lineal* had continued to increase in size from 1926 to 1928 with a variety of writers and many feature articles. However, with the onset of the Depression the journal shrank, and, after nearly two years of intermittent appearance owing to strikes and other unsettling events in Spain, it ceased publication in 1932. Thus ended the long autobiography of Linear Planning in Spain.

It should be understood that the Compañía Madrileña de Urbanización had from the beginning been engaged in a variety of business activities, not all of which were directly connected with the Ciudad Lineal. Its press, for instance, was a money-making enterprise engaged in printing and publishing a wide variety of materials other than the Company's own. Soria had stated in launching the Company in 1894 that it would buy and sell lots and houses all around Madrid, and it is to this day concerned with real estate outside of the Ciudad Lineal's five kilometers. For instance, around 1903 it was dealing in subdivisions at Colmenar Viejo, on the highway to Aragón, and on the roads to Vicálvaro and Pozuelo, none of these being in the Ciudad Lineal. Also its construction business, in its heyday, included the building of large edifices in the center of Madrid in addition to the wide variety of works to be carried out within the Ciudad Lineal.

Arturo Soria had arrived at his theory of the Ciudad Lineal in part from his experience with city railways, and his company always managed a network of lines far beyond

39. Compañía Madrileña de Urbanización, *La Reintegración al Campo y la Ciudad Lineal: Informe presentado por la C.M.U. fundadora y constructora de la Ciudad Lineal á la Información Pública abierta por la Junta de Reintegración al Campo de Barcelona* (Madrid: Imprenta de la Ciudad Lineal, 1928).

40. C.M.U. [Compañía Madrileña de Urbanización], *Guía de la Ciudad Lineal: 1930-31* ([Madrid]: Imprenta de la Ciudad Lineal, 1930).

41. See note 29.

42. See note 19.

43. See note 18.



12. A simple house in the Ciudad Lineal costing about \$1,300, as advertised in *La Ciudad Lineal* for 1909.

the necessities of the Ciudad Lineal suburb. For instance, in 1924 the Company controlled fifty-two kilometers of railway and was planning one hundred more, of which only eleven kilometers were actually serving its model community. By 1947 this had been reduced to about twenty-one kilometers, the major losses being the Vallecas-Canteras line and the Fuencarral to Colmenar Viejo railway, whose respective fates were described above. The struggle to obtain the franchises and to install the equipment on the ten different lines of the Company is a narrative of considerable human interest that can be followed in the *revista*, *La Ciudad Lineal*, throughout its entire span of publication. Other businesses of the Company were the sale of water, electric power, and building materials; the operation of stores and recreational facilities in the Ciudad Lineal; and the management of a savings bank. These diversified activities were in the spirit of the Company's original masthead statement that had appeared in *La Ciudad Lineal* in 1897.

When considered from a financial point of view, the Madrid experiment seemed to vacillate between its character as a money-making enterprise and its evangelical mission of bringing a good life to the citizenry of the world. It sought to redistribute the land of Spain and to remove the tyranny of landlordship. In 1921 it would construct a workingman's house for as little as \$800 (fig. 12). However, the Ciudad Lineal functioned for many *madrileños* as a summer colony, and there were sumptuous homes along its main avenue, the Calle de Arturo Soria. The Company had to make considerable profit in order to survive. It had started with an authorized capital of about \$500,000 which was later increased to about eleven times that amount. In order to attract its original investors it had been necessary to offer dividends of ten per cent on its first series of securities. This was later reduced to as little as five per cent in 1905, but the Company when it could pay dividends apparently did so at about eight per cent. This considerable margin of profit may be the reason why the State refused to confer on the Company the status of 'public utility' as an instrument of public benefit. Furthermore, the Company's regulations regarding default in the financing of houses in the Ciudad Lineal were rather strict and hardly to the benefit of its customers. All in all, the financing methods of the enterprise were considered rather primitive by American and European standards when analyzed by an American expert in 1921.<sup>44</sup>

However, there flourished in the colony a strong spirit of fraternalism, nurtured by Arturo Soria y Mata and his successors. Their hope was to found a new life, a whole life, for people from the crowded sections of Madrid. The Introduction to the *Guía de la Ciudad Lineal* of 1930 begins:

You would be interested, dear reader, in the work of the Ciudad Lineal, whether or not you are looking for houses, whether or not you have the intention of living in the Ciudad Lineal, and whether or not you aspire to the purchase of lots; you will be interested because the work of the Ciudad Lineal is a work of humanity, of an exemplary humanity; and to Man no act of Man is indifferent.

The work of the Ciudad Lineal is not, in fact, the work of a businessman or of an industrialist; it is the work of an apostle and an organizer, all in one.

The work of the Ciudad Lineal will interest you because it is the work of a thinker, of a novelist, of a politician, of an extraordinary statesman, an organizer; because it is, in short, an example of how much a human work can embrace, whatever class it be.<sup>45</sup>

Schools and recreational facilities—sports and theater—were among the earliest elements included in the Ciudad Lineal. The annual Fiesta del Arbol, with its emphasis on the children planting trees and reciting pieces as well

44. Edith E. Wood, 'The Spanish Linear City', *Journal of the American Institute of Architects* IX (1921), 169-174.

45. See note 40, p. 3.



as on adult entertainment and athletics, served to draw residents together in communal solidarity. A sense of this community spirit can be grasped from a note in *La Ciudad Lineal* in May 1914:

*What the Ciudad Lineal Is*

The Ciudad Lineal is the most aristocratic and distinguished section of the surroundings of Madrid.

Titled aristocrats and families of the high society of Madrid live there winter and summer in their respective country houses.

Wealthy businessmen and industrialists, doctors of great fame, important employees from the offices of Madrid, priests, active and retired military men, alternate the life of work and business of Madrid with the quiet and healthy country life in the Ciudad Lineal.

On the less expensive lots near the wealthy proprietors, live in their more humble homes a great number of modest-salaried employees and laborers of substantial daily wage.

All these are engaged in a fine business, which is that of health. Every house is a sanitarium in which the chronically ill and the frail prolong their life, and where children and young people grow up healthy and strong.

With that which is saved on doctors' bills, on medicines and funerals, there is more than enough to pay by installments for the lot and the house, thus turning oneself into the owner of a country place instead of remaining forever a tenant without a house of one's own.

These advantages make up, in part, for the greater expenses in food, weddings, and christenings.

In the Ciudad Lineal there do not exist, with very few exceptions, either landlords or tenants, and for eighteen years we have not had the sorrow of crimes, fires, or epidemics.<sup>46</sup>

The principle of making available to each working man his own house and plot of land received special emphasis. That such a program of land reform would allay popular unrest is a venerable notion in Spain, going back at least

to the suggestions of the Conde de Campomanes in the eighteenth century. Soria's group believed strongly in Henry George's thesis that 'man would obtain happiness on earth and the regularization of his economic life if everyone could be the owner of the ground he works, because the earth if properly worked would be sufficient to give every man his food . . .'.<sup>47</sup> With this in mind, both the land and the obligations of the Company were from the beginning made available to the public on the basis of small monthly payments. Furthermore, in 1907-1908 a workers co-operative was organized within the settlement to improve opportunities for its members. The continual publication of do-it-yourself articles on carpentry and household gadgets in *La Ciudad Lineal* would be another facet of this same effort. A specific result of these policies and a taste of the charming sentiment that pervaded the whole operation can be illustrated by a brief announcement that appeared in *La Ciudad Lineal* on 30 January 1910:

*A Worker Becomes Proprietor*

Our trolley conductor Don Juan de la Rubia has paid the last installment and is now the sole owner of one of the most attractive worker's houses of the Ciudad Lineal, on the street Lopez Aranda.

Now he is his own landlord. He has emancipated himself from the tyranny of renting, and this by his own efforts, by his virtues and his merits.

To celebrate this event, so important in his life, he invited several of his friends and especially Don Arturo Soria and his sons to join him for a modest banquet at the restaurant of the Ciudad Lineal on the 26th.

The new proprietor of the restaurant, who sets so good a table, exceeded himself on this occasion, and deserves the congratulations of all!<sup>48</sup>

46. *La Ciudad Lineal*, año XIX, no. 558, 30 May 1914, p. 191.

47. See note 40, p. 7.

48. Año XV, no. 402, p. 1797.

# The First Landscaped Skyscraper

WINSTON R. WEISMAN The Pennsylvania State University

THE skyscrapers with landscaped plazas now being erected in the United States and elsewhere point up the fact that this concept has become one of the most significant innovations in the field of contemporary commercial architecture. Lever House and Pittsburgh's Gateway Center are two examples that typify the trends toward limited and large-scale integration, respectively. This development, inspired by the thinking of such men as Le Corbusier and Gropius, is part of a more comprehensive movement which includes factory, hotel, and residential architecture, as witness such examples as the Ford Motor Company Offices at Dearborn, Michigan; the Terrace Plaza Hotel, Cincinnati; and the Lake Meadows housing scheme, Chicago. The fact that the last three projects, as well as Lever House, are the work of Skidmore, Owings and Merrill indicates that the landscaped commercial structure has become, at least for this firm, a tried and accepted formula.

The use of landscaping in connection with residential architecture is, of course, not surprising, considering the historical precedents. Equally understandable is the relationship between hotel architecture and landscape art where a program of beautification is essential to the creation of a proper environment. In the case of the factory, usually located in outlying areas where sites are comparatively inexpensive, the landscaping of ground surrounding the building is the logical way to give the entire design a sense of finish.

However, in the office building the factors militate against the use of landscaping. There is no historical tradition for such practice. Sites are expensive. And, more important, the speculators, who often control policy in constructions of that type, and who think of buildings in terms of economics instead of aesthetics, are reluctant to spend money for anything that is not absolutely essential to the functioning of the enterprise as a going concern. Therefore, before landscaping could be related to office structures, it had to be proved that such a concept was both practical and profitable.

Fortunately, the trend toward quality construction that

has characterized business building design during the past decade paved the way for the introduction of landscaping. But there still remained the problem of who or what would prove that such a type of planning was financially sound. The proof was provided during the 1930s in the terraced gardens and Sunken Plaza at Rockefeller Center. So successful was the trial at the Center, and so great has its reputation become, that it tended to supply the necessary precedent for postwar builders and architects. Because of its importance to the larger problem of landscaping in skyscraper architecture, the story of what happened at the Center merits attention.

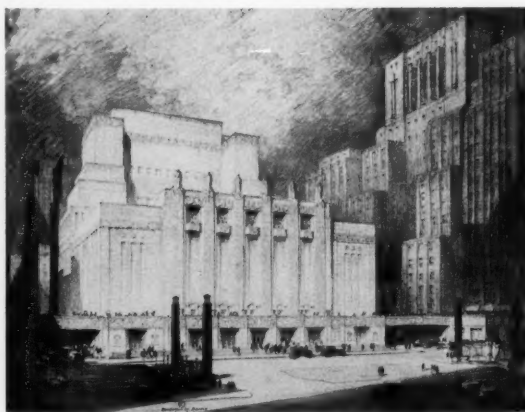
The Sunken Plaza and the terraced gardens were not conceived as integrated parts of a grandiose scheme. They were distinct features and evolved out of the needs of the times and from the problems confronting the management and architects. The Sunken Plaza was the older concept, appearing in the earliest plans for the project which was to become Rockefeller Center. The terraced gardens were not introduced until 1931 after the enterprise had been transformed from an opera into a business center. Since both elements had checkered careers, they are best understood when treated separately.

The origin of the Sunken Plaza can be traced back to the year 1927. Rockefeller Center, as is well known, was to be a cultural center then. The Metropolitan Opera Company was in hopes of building a new opera house—one that would be more in keeping with the aristocratic traditions of the opera than the structure now standing at 39th Street and Broadway. In search of inspiration and information, Benjamin Wistar Morris, the architect chosen to design the opera house, went to Europe in the summer of 1927. His route included London, Paris, Berlin, Cologne, Dresden, Munich, Stuttgart, Rome, and Milan. Everywhere he went he talked with experts in the field of opera-house design; he made sketches of the more famous examples and, more important for our story, the architect made studies of famous plazas: notably, the Place de la Concorde, Paris; the Place Vendôme, Paris; and the Piazza of the Vatican, Rome.

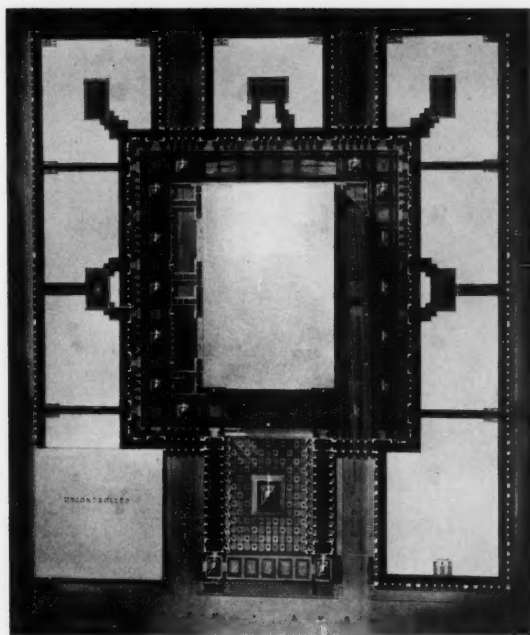


1. Metropolitan Opera and Century Theater site, 1927, by B. W. Morris.

The European journey proved an important influence on the opera plans produced thereafter. The plaza became one of the main elements in the design. This is evident in the drawings made in December 1927 for the Century Theater site at 63rd Street and Broadway in which the



2. Metropolitan Opera House and Square, 1928, by B. W. Morris.

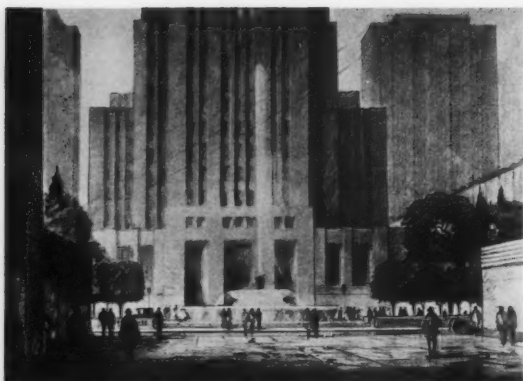


3. Scheme for Metropolitan Square, 1929, by H. W. Corbett.

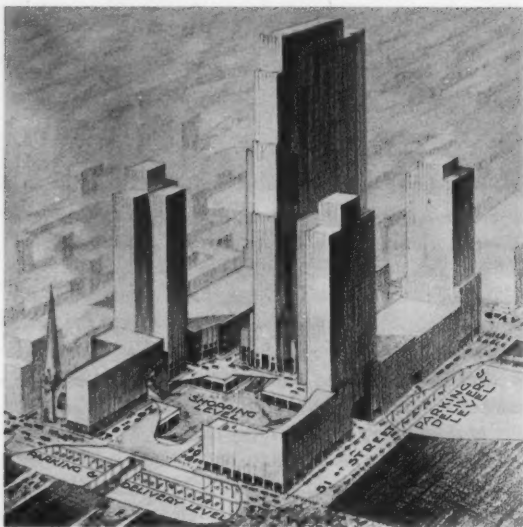
scheme is made more elegant and luxurious by the appearance of a plaza landscaped with shrubs and trees and studded with spraying fountains (fig. 1).

In May 1928, when Morris made his first designs for the present site of Rockefeller Center, he continued to give the plaza a prominent place in his plan. This time, however, the reason was not primarily aesthetic, but economic. This is made clear in a talk given by the architect at the Metropolitan Club, organized to get financial backing for the scheme. In explanation of his plan, the minutes of the meeting in Morris' files said: 'The whole thing stands or falls on the amount of increased revenue obtainable due to the creation of an open square.' He intended to exploit the plaza by developing both the shopping and office space bordering the area even to the point of adding a second-story shopping terrace on all sides of the plaza to increase the rental return (fig. 2).

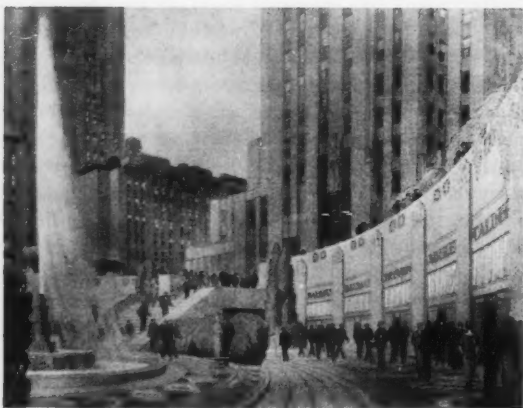
By this time the plaza had become so much a part of the development scheme that it was listed as a specification in the plans for a competition which was announced in May 1929. One of the more interesting schemes developed was that of Harvey Wiley Corbett (fig. 3). This called for an elaborate plaza fronting on Fifth Avenue at street level and rising to a second-story level at the point before the opera house in the form of a great square resting on the buildings



4. Plaza Scheme, 1930, by Associated Architects.



5. Scheme for Shopping Concourse, 1931, by Associated Architects.



6. The Sunken Plaza, 1931, by Associated Architects.

planned for the blocks on the north and south. Entrances were provided to the seven units that flanked the plaza so that persons using the area could move directly into the structures from the upper level. East-west traffic flowed beneath the plaza along 49th and 50th Streets. The plaza itself, as the rendering done at the time illustrates, was to be decorated with mosaic pavements, fountains, and plantings.

When the opera company dropped out of the enterprise in December 1929, the plaza was maintained in the purely commercial plans that followed. In subsequent schemes the plaza was given less and less prominence until 1931, when it was revived on a grand scale. Ever since its conception the plaza was located at street level. Between 1929 and 1931 it was simply thought of as an extension of the promenade between what is today the British Empire Building and La Maison Française. It was decorated with a large fountain flanked by shrubs and trees. It was an expensive ornament with no economic purpose (fig. 4).

By 1931 conditions had reached a critical stage in the planning for Metropolitan Square, as the Center was then known. Expenses were mounting daily and the prospect of obtaining revenue from the project dim. The management, under the direction of Todd, Robertson and Todd, spent long hours trying to conjure up ways and means of getting additional revenue. Finally, it was suggested that a shopping area might be introduced on a concourse level located one story underground (fig. 5). The problem which developed was how to get shoppers down there. One solution was to add a huge parking station and bus terminal below ground which would force commuters into the area at the time of their arrival and departure. But this was not considered sufficient. Something more was needed to attract the thousands of pedestrians and potential shoppers walking along Fifth Avenue. The solution was to sink the plaza to the concourse level, connect it with Fifth Avenue by a broad promenade and staircase, and then decorate the sunken level with mosaic floors, fountains, flowers, trees, and even statuary in an attempt to make the area as inviting and as attractive as possible. It was believed that such an arrangement would ensnare the unsuspecting, but all-important, shopper.

An early sketch dated 1931 shows how the Associated Architects (Reinhard & Hofmeister; Corbett, Harrison and MacMurray; Hood, Godley and Fouilhoux) pictured the Sunken Plaza (fig. 6). The partial view features a great fountain surrounded by landscaping in an oval-shaped area bordered by shops. This solution was discarded. Its fault, apparently, lay in the fact that the two staircases placed at the east and west side of the plaza provided an 'escape hatch' for the shoppers. They could come down the east staircase (not shown) from Fifth Avenue and then exit up the west staircase without going into the concourse level beyond. Later plans show the 'escape hatch' closed by the removal of the west staircase (fig. 7). Now



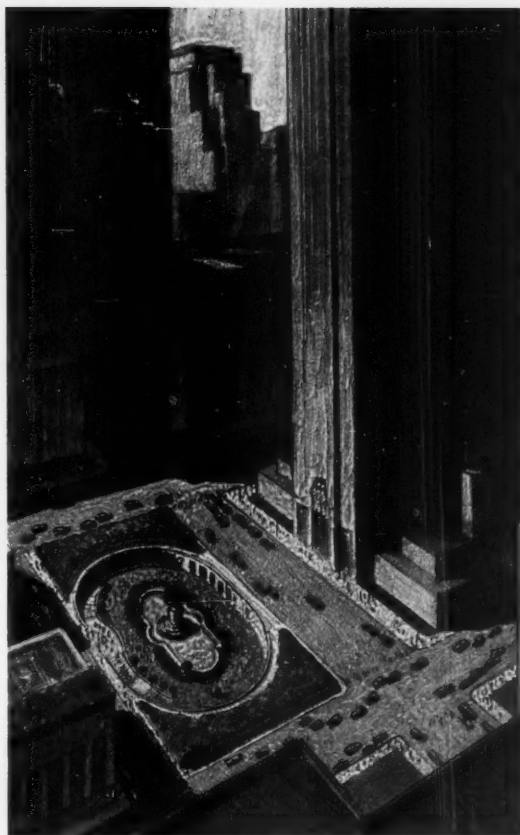
the shoppers, having been drawn down to the concourse level, had to enter the underground shopping area or retrace their steps—something one is reluctant to do. A typical rendering (fig. 7) shows the new arrangement with the eastern staircase hugging the side of the plaza. The center of the area contains a fountain decorated with an armillary sphere. Bordering the plaza on the street level is a fringe of landscaping. In this scheme the shopper is led gently down the ramp to the shops lining the walls. The pool is intended to keep the traffic moving along the outer edges where the shops are located. At the west side are the entrances to the concourse level.

By 1932 the oval shape of the Sunken Plaza gave way to a rectilinear form which the architects believed was better suited to the design as a whole (fig. 8). The fountain was moved to the west side of the concourse in order to dramatize the entrances into the underground shopping area. This scheme was only one short step removed from the present one.

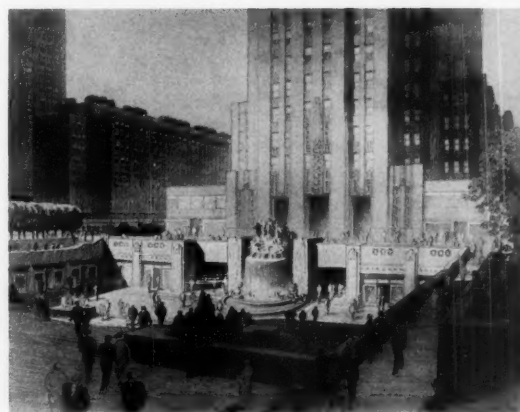
Curiously enough, today the Sunken Plaza does not play the part intended for it at the time of its conception. Happily for Rockefeller Center, the concourse level is a complete success as the result of a well-co-ordinated underground circulation system which ties all buildings to each other and to the Independent Subway Line running along Sixth Avenue. Shops there are busy serving not only the 26,000 inhabitants of the Center, but also the thousands of visitors that flock to the buildings daily. Since it was no longer needed as a 'lure', the Sunken Plaza was transformed into a revenue producer, being used as a restaurant in the summer and a skating rink during other seasons of the year.

In a sense, it still serves its original function, as it has become the principal point of attraction in the scheme. Huge crowds gather at the Plaza every day and at all hours are drawn by the spectacle produced by the landscaping, the fountains, the statuary, and the activities below. Holiday occasions, like Christmas, always see specially-planned programs and decorations which obviously delight the public. They seem to love the bright and colorful display the ensemble produces and this in turn has made the Center one of the most popular building complexes in the world.

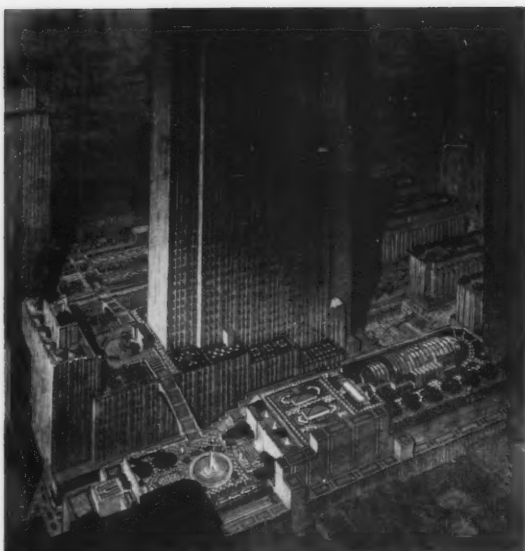
The gardens perched on the setbacks of the RCA Building, the International Building, and on the roofs of the British Empire Building and La Maison Française have an equally interesting evolution. The idea seems to have originated in 1930 at a meeting between the management and architects in offices atop the Graybar Building. The group was considering the problem of how to bring tenants to the Center. Andrew Reinhard, a member of the architectural board, recalls that it was Raymond Hood who suggested the possibility of decorating the roofs of the planned structures with gardens. His thought was that landscaping would not only attract tenants, but it would also increase



7. The Sunken Plaza, 1931, by Associated Architects.



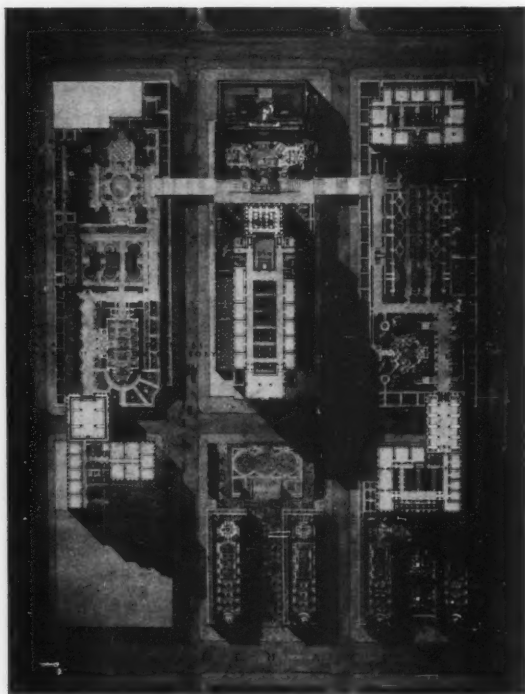
8. The Sunken Plaza, 1932, by Associated Architects.



9. The Roof Gardens, 1932, by Associated Architects.



11. Rockefeller Center, 1933, by Associated Architects.



10. The Roof Gardens, 1932, by Associated Architects.

the value of the space as well. This was proved in buildings adjacent to parks where higher rentals prevailed because of the quality of the environment. Hood suggested creating a park on top of the low units which would be visible to persons in the tall office buildings. Such a park, he believed, could be realized for about \$250,000 and would more than pay for itself in terms of increased rentals.

By 1931 the conception had taken definite shape. Plans show the low units covered with gardens of many types (fig. 9). In 1932 the scheme was developed further with bridges across 50th and 49th Streets as well as passages through the bridge buildings thrown over the street which was eventually to be known as Rockefeller Plaza, thereby tying the whole series of structures into a park-like unit. Figure 10 illustrates how it would have been possible to enter the Center at the International Building on the northeast side of the site and then, after looking down upon the private gardens which were to be available only to the offices at that point, move through the bridge building toward the open-air tea garden and sculpture exhibit, then across the 50th Street bridge to the formal gardens covering the RCA Building West, which contained a music conservatory and restaurant as well. The south block included a marionette theater, a permanent sculpture exhibit, an open-air flower exhibit, and a botanical observatory. The British Empire Building, La Maison Française, and the Sunken Plaza formed a separate unit in this elaborate scheme. The view shows that the various parts of the plan

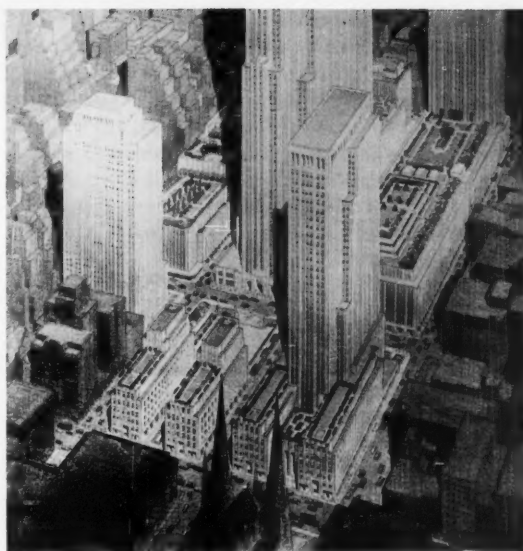
were richly decorated with mosaic floors, fountains, trees, shrubs, and, of course, flowers. The whole arrangement made for a very colorful and exciting spectacle which prompted some newspaper writers to refer to the conception as a modern version of the Hanging Gardens of Babylon. There seems to be little doubt that had the gardens been realized, the Center would have fulfilled its purpose of being one of the most attractive schemes in the entire history of commercial architecture.

Today only a fragment of this ambitious program remains. The first serious setback occurred in 1933, when it was decided to do away with the bridge buildings (fig. 11). This interrupted the continuous flow of traffic over the site. In 1935 the decision to give the International Building an east-west axis and to increase its girth robbed the scheme of a bit of its grandeur especially at the northeast corner of the site (fig. 12). But the mortal blow was struck when the Associated Press and Eastern Airlines Buildings were added in the late 1930s. These structures replaced the low units in the center of the north and south blocks that were indispensable to the garden plan (fig. 13).

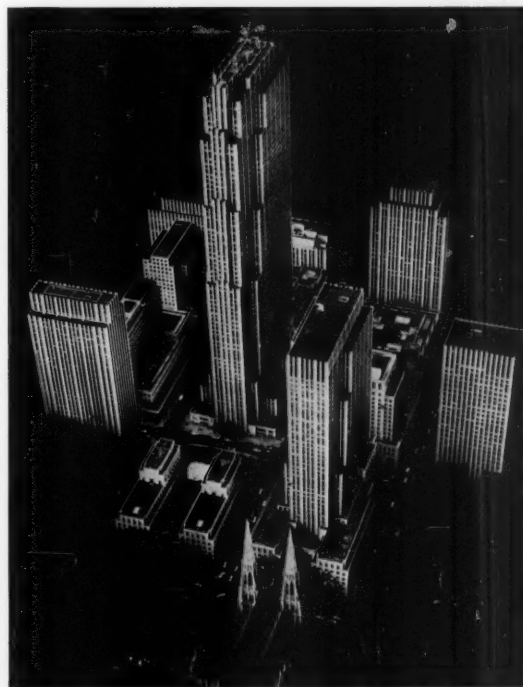
In the period immediately following the end of World War II architects were quick to evaluate the true worth of the experiments worked out at Rockefeller Center. They realized that open space and landscaping can play an important part in commercial design. A few were able to convince their clients that it was desirable from an aesthetic point of view and practical from a financial one. For examples one has only to look at Skidmore, Owings and Merrill's Lever House, New York City; Mies van der Rohe and Philip Johnson's Seagrams Building, New York City; I.M. Pei and Associates' Mile High Center, Denver; and Harrison and Abramovitz's Time and Life Building, New York City.

Despite the advances made, the landscaped plaza has yet to sell itself, apparently. Frank Fogarty, in the January 1958 issue of *Forum*, gathered some statistics in an article called 'The Earning Power of Plazas', in which he showed that the introduction of such an element is very much a gamble. He points out that Pittsburgh's Gateway Center appears to be a better-than-average moneymaker, whereas Philadelphia's Penn Center is only a 'so-so investment'. Rockefeller Center's net return is only a little more than six per cent as against a normal earning of from ten to twelve per cent. Mile High Center is holding its own in competition with the more conventional buildings around it.

Of course the real test is yet to come. The demand for space is still strong, allowing such structures as are now being designed by Emory Roth and Sons to compete successfully for tenants and to show a greater return on the investment. However, should a depression spread over the land, and competition for space become keen, there is good reason to believe that the Plaza-adorned office building will then prove its worth.



12. Rockefeller Center, 1935, by Associated Architects.



13. Photograph of site (courtesy of Rockefeller Center).

# The Author of the *Architecture Moderne* of 1728

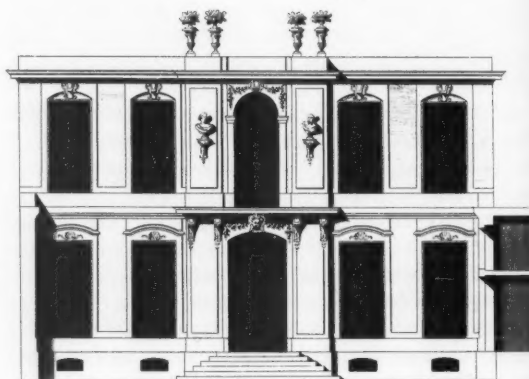
WOLFGANG HERRMANN

THE *Architecture Moderne* of 1728 differs from most architectural books published during the preceding decades by refraining advisedly from any discussions on the Orders or other theoretical problems related to them. Its avowed aim is to fix attention on questions of planning and also on practical subjects such as construction, specifications, cost, and bylaws. It is pointed out in its preface that for the last sixty years no comprehensive study on planning had been published, which remark must have been made with the third edition of Pierre Le Muet's *Manière de bien bastir* of 1663 in mind, a book which undoubtedly had served as model for the new publication. By dealing once more with the subject of planning the *Architecture Moderne* offers an important contribution to the architectural literature of the time, so that to know its author's name should be of some interest.

The book was published anonymously by Claude Jombert. Barbier in his *Dictionnaire des ouvrages anonymes* attributes the work to Charles Etienne Briseux (1680-1754), who is known as the architect of the still extant Hotel d'Augny (No. 6 Rue Drouot, today the Mairie of the 1<sup>er</sup> arrondissement) and as the author of two books on architecture.<sup>1</sup> Barbier took this piece of information from *La France littéraire* of 1769.<sup>2</sup> Most public libraries, trusting Barbier's authority, have the book catalogued under Briseux and this attribution is generally accepted by all dictionaries and biographies, as for instance by Querard, Michaud, Brunet, Bauchal, Lance, Thieme-Becker, and

1. *L'Art de bâtir des maisons de campagne* (Paris, 1743), and *Traité du beau essentiel dans les arts* . . . (Paris, 1752). Bauchal and Thieme-Becker give the date of birth as 1660. This is quite improbable since Briseux would have been 90 when he built the Hôtel d'Augny, and 92 when he published his *Traité du beau*. The date of the second edition of the *Architecture Moderne* is 1764, not 1754, as stated in Thieme-Becker.

2. J. D'Hebrail and J. de la Porte, *La France littéraire* (Paris, 1769-1784), II, 17.



Court façade, by Tiercelet, plate 83.

most recently by the *Dictionnaire de Biographie Française*. Modern scholars on the whole follow these authorities, but doubts have occasionally been voiced, as for instance by Cassirer, who rejected Gurlitt's attribution to Briseux without, however, proposing the name of another author.<sup>3</sup> Kimball, who in 1943 left the question of authorship open, named Jean Courtonne as the author of the *Architecture Moderne* in the revised edition of 1949.<sup>4</sup> This attribution was probably determined by the fact that illustrations of four buildings, designed by Courtonne, have been subjoined which had already been used years earlier by the publisher Jacques Vincent in Courtonne's *Traité de la Perspective* (1725). However, if Courtonne had been the author of the *Architecture Moderne* he would certainly have

3. Kurt Cassirer, *Die ästhetischen Hauptbegriffe der französischen Architektur-Theoretiker von 1650-1780* (Berlin, 1909), pp. 27, & 34 n.

4. Fiske Kimball, *The Creation of the Rococo* (Philadelphia, 1943), p. 132, n. 64, and *Le style Louis XV* (Paris, 1949), p. 143, n. 1.



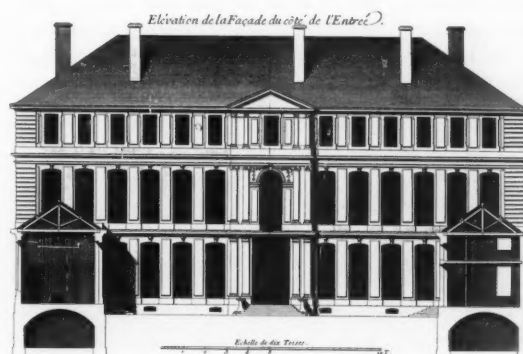
made clear his responsibility not only for these buildings but also for all the other designs as well as the text, in the same way as he made it clear when he referred to his own buildings in a manuscript for another—unpublished—book.<sup>5</sup> The inclusion of Courtonne's designs can, it seems, be explained differently. Apparently Jombert acquired the firm of Jacques Vincent, for some copies of the *Traité de la Perspective* have Jombert's name and address glued over those of Vincent.<sup>6</sup> Instead of the assumption that Courtonne had something to do with the *Architecture Moderne*, it seems more feasible to suppose that Jombert tried to make the most of a bargain by adding to the new publication the recently acquired and attractive plates of Courtonne's buildings.<sup>7</sup>

It is rather strange that the attribution to Briseux by *La France littéraire* should ever have been given credence, because the name of the artist responsible for this substantial collection of designs for houses was clearly stated by Jombert's son Charles Antoine when, in 1764, he published the second greatly enlarged edition of the *Architecture Moderne*. In the *Avertissement* he recounts that this treatise originated from a collection of engravings representing sixty different designs, and adds: 'Elles sont du dessein et de la composition de M. Tiercelet, Architecte.'<sup>8</sup> His father, he says, acquired these plates in 1726 and, intending to make a book out of them, approached various architects. However, the treatises which these architects submitted fell short of his expectations and also failed to do credit to the designs which they purported to describe. It is not quite clear whether Jombert père reproduced these various treatises in spite of their shortcomings or, which is more likely, adopted the course followed by his son for the second edition—namely, to make use of only that which he approved, the material of which now forms the first volume.

Still, the real value of the *Architecture Moderne* is to be found in the second volume containing the collection of designs for houses ranging from very small dwelling houses to elaborate mansions, and it is for that collection that Tiercelet had been named the author. Nothing is so far known of him except that the widow of an architect Gilles Tiercelet died on 29 March 1763 and that an Augustin Claude Tiercelet, also an architect, died on 5 May 1769.<sup>9</sup>

The latter wrote in 1758 to the Marquis de Marigny asking to be admitted to the Académie d'Architecture. The document reads: 'Claude Augustin Tiercelet, age de 33 ans, fils de Gilles Tiercelet, architecte Entrepreneur des Bâtimens à Paris qui a composé l'Architecture Moderne en 1728 en deux tomes à l'honneur de vous représenter que depuis l'age de 12 ans il a travaillé à l'architecture.'<sup>10</sup>

The son's attribution of the *Architecture Moderne* to his father is corroborated by an authority as well informed as Jacques François Blondel. In his *Architecture Française* of 1752 he refers to Tiercelet as the author of the *Architecture Moderne*, also stating that Tiercelet took Le Muet's book as model. Two years later he again lists the *Architecture Moderne* under Tiercelet's name when recommending text-



Entrance façade, by Tiercelet, plate 116.

books to his students; he repeats this again in 1763, namely, still a year before Charles Antoine Jombert had recounted in the *avertissement* of the second edition the history of the original edition. On this new list of books, submitted to the Academy to supplement their existing library, the 'Architecture moderne par Tiercelet 2 vol. in 4°' is followed by 'Architecture de Briseux 2 vol. in 4°'.<sup>11</sup> Again, in 1772, Blondel talks of 'Architecture moderne ou l'Art de bien Bâtir, mis au jour bien avant le nôtre, par feu

5. See the author's paper 'Antoine Desgodets and the Académie Royale d'Architecture', *Art Bulletin*, xl (1958), 36, n. 77.

6. So for instance the copy in the Avery Library, Columbia University.

7. Jombert also uses the frontispiece of Courtonne's book, blotting out the dedication to the Duc d'Antin by pasting over it a piece of paper with the new title.

8. Actually the collection could have consisted of 56 designs only, as the last 4 were those of Courtonne. Of the total of 143 plans, elevations, and sections, 14 are by Courtonne.

9. *Nouvelles Archives de l'art français*, 2nd series, vi (1885), 246.

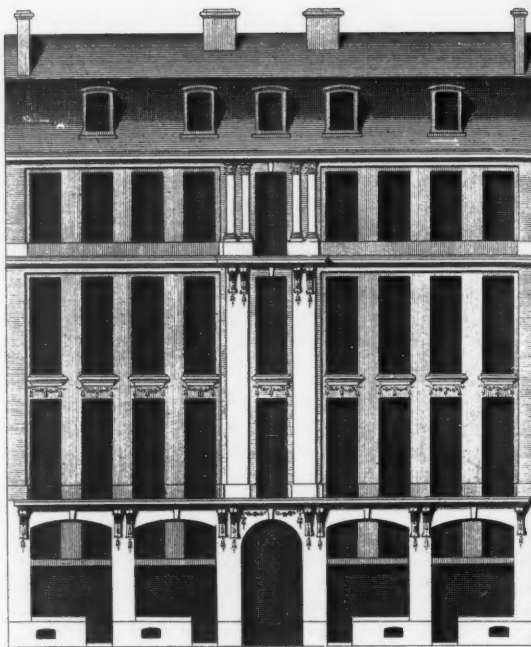
10. Paris, Archives Nationales O<sup>1</sup> 1909 (2) fol. 19. It follows from this document that Gilles Tiercelet must have died before 1758.

11. J.-Fr. Blondel, *Architecture Française* (Paris, 1752), I, 255 n., and *Discours sur la nécessité de l'étude de l'Architecture* (Paris, 1754), p. 86, and Archives Nationales O<sup>1</sup> 1073 (189), dated 11 November 1763.

M. Tiercelet. . .<sup>12</sup> While Blondel's reference to *Architecture Moderne* and Tiercelet is explicit enough, the citation of Briseux's book is very vague, yet, at the same time, probably gives an indication of how the confusion between the two authors could have arisen. The correct title of Briseux's book is: *L'Art de bâtir des Maisons de Campagne* and the alternative title of the *Architecture Moderne* is: *ou l'art de bien bâtir pour toutes sortes de personnes*. . .

Perhaps one should be cautious and follow the example of the *Katalog der Ornamentstichsammlung der Staatlichen Kunstbibliothek, Berlin* (Berlin, 1939, No. 2397), which lists the first edition of the *Architecture Moderne* under the name of its publisher Claude Jombert, naming—probably the only library to do so—Tiercelet as designer, but this seems to magnify without much justification the publisher's rôle as a compiler. Since the main value of the *Architecture Moderne*, and its most original and creative part, lies undoubtedly in the collection of designs for houses, it would be only right to give back this work to its author, Gilles Tiercelet.

12. J.-Fr. Blondel, *Cours d'architecture* (Paris, 1772), III, 233 n. and see Aug. Prost, *J.-F. Blondel* (Metz, 1860), p. 3 n. Blondel emphasizes that he had no part in the *Architecture Moderne*, which apparently had been attributed to him; see for instance A. F. Frezier, *Dissertation sur les Ordres d'Architecture* (Strassbourg, 1738), p. 6, marginal note.



Street façade, by Tiercelet, plate 51.

# A Note on the Chicago Fair of 1893 and Frank Lloyd Wright

DAVID GEBHARD Roswell Museum, Roswell, New Mexico

THE deep and lasting effect which the Japanese pavilion and exhibits produced on the young Frank Lloyd Wright has been a frequent subject of discussion.<sup>1</sup> Moreover Tselos has indicated that Wright must also have been keenly aware of the rather elaborate exhibition of Mayan art and architecture present at the Fair.<sup>2</sup> In addition to these influences there is another exotic source, however, which has so far been overlooked. This is the Turkish Exposition Building constructed at the Chicago Fair of 1893 (fig. 1).<sup>3</sup> Because of its small size and relative obscurity this building has not attracted the attention of students of Wright or of the other progressive architects. In the design of this building one may discover several features which one closely associates with Wright's early work of the 1890s and his subsequent mature work of the early twentieth century.

Photographs of the building show the Turkish pavilion to have been a small, square structure covered by a broadly projecting hipped roof surmounted by a small cupola. According to one of the exposition catalogues, the building was designed by the Imperial architect of the Sultan of Turkey. For his model the Turkish architect was said to have chosen a seventeenth-century fountain located near Constantinople.<sup>4</sup> With the exception of the foundation and certain elements of the roof the structure was pre-



1. Turkish Pavilion, World Columbian Exposition, Chicago, 1892-1893 (from *Columbian Exposition Album*).

fabricated in Damascus and was then shipped to the United States. At the conclusion of the Fair the walls and other sections were dismantled and returned to Turkey.<sup>5</sup>

'The characteristics of the Pavilion', states an exhibit catalogue, 'were its over reaching roof, and its outside walls of a wood called mucharbian, which were thickly carved with arabesque texts and traceries.'<sup>6</sup> Even a cursory glance at the building indicates an amazing similarity to a number of Wright's later designs. Such features as the hipped roof which projected far out over the walls of the building, the geometric decoration which covered the soffit of the eaves, the continuous band of high windows placed directly under the projecting roof with the sills of the windows, and the intervening geometric designs car-

1. Henry-Russell Hitchcock, *In the Nature of Materials* (New York, 1942), pp. 26, 32, 34, 35, 59; Hitchcock, 'Frank Lloyd Wright and the Academic Tradition of the 1890s', *Journal of the Warburg and Courtauld Institutes*, VII (Jan.-June, 1944), 46-63; Grant C. Manson, *Frank Lloyd Wright to 1910* (New York, 1958), pp. 34-41, 165-168.

2. Dimitri Tselos, 'Exotic Influences in the Architecture of Frank Lloyd Wright', *Magazine of Art*, XLVII (1953), 160-169.

3. Illustrated in *The Columbian Exposition Album* (Chicago, 1893).

4. *The Dream City*, Portfolio No. 12, Sec. 5 (St. Louis, 1893).

5. *The Dream City*; this catalogue also mentions a smaller, but similar, Turkish government building located near the larger structure. The author has not been able to locate a photograph of this building.

6. *The Dream City*.

ried by a continuous horizontal line, the geometric pattern of squares on the wall panels, and the terraced arrangement of steps are features familiar to any student of Wright. On the whole the Turkish building was classical in its symmetry, order, and balance, but at the same time it retained a romantic flavor which must have produced a deep effect on the young Wright.

One need not seek out obscure examples of Wright's early work to discover several close analogies to the Turkish Exposition Building. The design which bears the closest relationship is his house for W. H. Winslow, River Forest, Illinois, designed in 1893 (fig. 2).<sup>7</sup> This dwelling has a similar overhanging roof, and a band of windows and terra cotta ornament placed directly under the eaves of the roof. Both the Turkish building and the Winslow House present a balanced and symmetrical façade dominated by an entrance area. Needless to say this comparison is not meant to imply that Wright's design is a direct copy of the Turkish building, but rather that there is such a close parallel between the two structures that it seems inconceivable that one could have been built without at least a passing acquaintanceship with the other. Like any sensitive artist Wright was aware of the visual and intellectual world around him. With the influence of Sullivan's design and philosophy it is only natural that Wright would turn to several facets of the non-occidental world for sources of inspiration.

Another element of Wright's work which bears a close relationship with the oriental is that of his two- and three-dimensional ornamental designs. This aspect of his work deserves a far closer study than has yet been devoted to it. Further examination of these designs may eventually clear up certain perplexing aspects of his work. A case in point, which may be related to the ornament of the Turkish building, is that of the skylight in the playroom added to Wright's own house in Oak Park in 1895. Here is a similar pattern of squares as one observed on the exterior wall panels of the Turkish building. As in the case of the Winslow House it is impossible to assert objectively that Wright derived this design solely from the earlier example of the Exposition building, but the similarity between the two, their close proximity of dates, and the fact that he was continually exposed to the buildings at the Fair would seem to indicate a probable connection. Certainly the Turkish building and its decoration provides as likely a source as any other single influence.

Similar design features to those of the Turkish pavilion occur also in a number of Wright's later buildings of the



2. W. H. Winslow House, River Forest, 1893-1894.

1890s. It is especially obvious in the articulation of the hipped roof, terra cotta bands, and arched openings of the Isidor Heller House, Chicago, 1897, and again in a similar less floral treatment of roof and terra cotta banding of the Joseph W. Husser House, Chicago, 1899. Both of these reveal an attempt on Wright's part to assimilate the numerous influences which were affecting him during these years and to arrive at a complete and total architectural statement. The early Prairie houses, such as the Susan Dana House, Springfield, Illinois, 1903, continued to employ the low overhanging roof, together with a band of terra cotta, and windows placed directly beneath the roof soffit. The later Avery Coonley House, Riverside, 1907, and even smaller E. P. Irving House, Decatur, 1911-1912, also used the wide overhanging roof together with bands of windows placed directly under the eaves, and tile and stucco geometric decorations (fig. 3).<sup>8</sup>

Finally, a classic statement of Wright's Prairie structures as illustrated in the little-known Cummings Real Estate Office, Oak Park, 1907, reveals several features which probably owe their source to the earlier Winslow House or directly to the Turkish building (fig. 4). The occurrence of the familiar projecting hipped roof and band windows under the eaves could well have been derived from this one exposition building more than from any specific Japanese or American-Italianate source.

7. See *Sixty Years of Living Architecture*. The work of Frank Lloyd Wright; Catalogue from the Exhibition at the Solomon R. Guggenheim Museum (New York, 1953).

8. The basic design of the E. P. Irving House was made by Wright before he left for Europe. The working drawings and supervision were under the direction of Marian Mahoney Griffin and Herman von Holst.



Looking at this period as a whole it is not without significance that a number of important artists of America and Europe turned their backs momentarily on the occidental tradition and sought their inspiration from non-European sources. Not only did Les Fauves and the Cubists of France and the Expressionists of Germany look to the folk art of Europe and the primitive art of Africa and the South Seas, but other European and American painters, writers, and architects were similarly affected by oriental and primitive arts.

Thus Wright's predilection for things exotic, whether Japanese, Mayan, or Turkish would seem to be a part of a general reaction experienced by many of the younger creative personalities. The question then is not whether these influences occurred in Wright's work, but to determine their various sources. As the Turkish building indicates, this task is by no means complete. There is much which remains to be solved before the complexity of Wright's architecture is fully understood.



3. E. P. Irving House, Decatur, 1911-1912 (photo: author).



4. Cummings Real Estate Office, Oak Park, 1907 (photo: Wm. G. Purcell).

## AMERICAN NOTES

### America's First Woman Architect?

Madeleine B. Stern, 152 East 179th Street, New York 53, New York, is preparing a book on nineteenth-century American women 'firsts', in which she hopes to include a chapter on the first professional woman architect of this country. More information is requested in response to her two queries:

#### *Harriet M. Irwin*

On 24 August 1869, Mrs. Harriet M. Irwin of Charlotte, North Carolina, a relative of Stonewall Jackson, applied for a patent (No. 94,116) for hexagonal houses, claiming that she had invented an improvement in the construction of buildings.

Does this indicate that Mrs. Irwin might be called the first American woman architect? Her 'invention' certainly preceded the work of Mrs. Louise Blanchard Bethune (1856-1913) who has been described as the first woman architect in this country and who was the first woman member of the American Institute of Architects.

On the other hand, did Mrs. Irwin 'borrow' her so-called invention from Orson S. Fowler, who in 1849, in collaboration with his brother, Lorenzo Fowler, described the 'octagon mode of building' in his *Home for All*?

Moreover, one invention does not make a professional architect. Did Mrs. Irwin follow up her patent for hexagonal houses with further architectural work?

#### *Louise Blanchard Bethune*

Mrs. Louise Blanchard Bethune (Mrs. Robert Armour Bethune) of Buffalo (1856-1913) was America's first professional woman architect and the first woman Fellow of the American Institute of Architects.

From 1881 to 1890 her firm was R. A. & L. Bethune. With the partnership of William L. Fuchs it became Bethune, Bethune & Fuchs, and finally Bethune & Fuchs. The firm built several schools in and near Buffalo, stores, and public buildings.

Mrs. Bethune was a member of the Western Association of Architects, and the Western New York Association of Architects, and started the Buffalo Society of Architects.

Despite this important pioneer work of hers, I am finding it all but impossible to get any information about her.

### American Influence Abroad, 1886 and Later

ROBERT KOCH

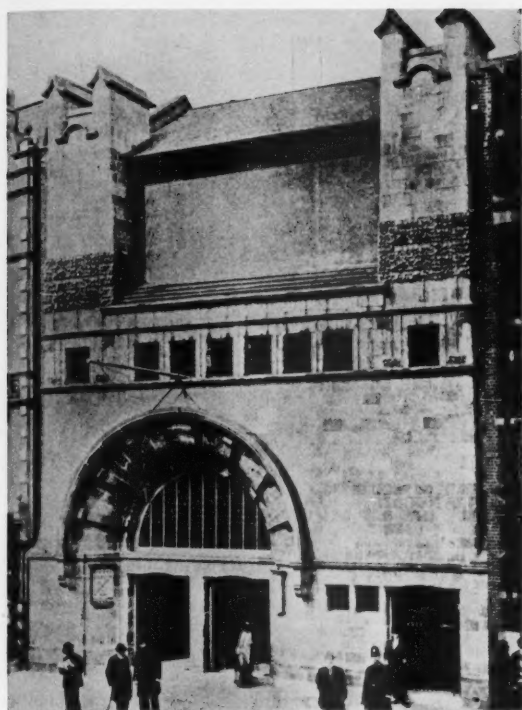
For a long time we have been thinking that Robert Smith's Walnut Street Prison (begun 1773) and John Haviland's Eastern State Penitentiary (built 1823-1829), both in Philadelphia, were perhaps the buildings most seriously studied by visitors from abroad. There are, of course, many ways of looking at the question.

Robert Koch of the New Haven State Teachers College has sent us the following notes:

Since Nikolaus Pevsner wrote that the Whitechapel Art Gallery (fig. 1) in London, built 1897-1899, may be 'the first case of American influence on England' as 'the heavy arch above the entrance must reflect some knowledge of what Richardson had done in America for twenty years and more',<sup>1</sup> other evidence has come to light which indicates that American architecture was much better known abroad than has previously been acknowledged.

H. H. Richardson was in London in 1882 and before his death in 1886 at least two well-known English travelers visited this architect at his home in Massachusetts. The first of these was the architectural critic and writer, Horace Townsend. In 1894 Townsend published an account of this visit in the *Magazine of Art*, illustrated with sketches and photographs of Richardson's buildings. He speaks of the originality, simplicity, and unity of their designs. He discusses not only those buildings in the vicinity of Boston, including the Harvard Law School, Sever Hall, and the Quincy Library, but also indicates that he had journeyed as far west as Chicago by describing the Albany City Hall, the Cincinnati Chamber of Commerce, and the Marshall Field Warehouse. He then concludes this article by referring to the home of the painter, Hubert von Herkomer as 'the only work on this side of the Atlantic by

1. Nikolaus Pevsner, *Pioneers of Modern Design* (New York, 1949), p. 98.



1. Whitechapel Art Gallery, London, 1899, by C. H. Townsend (courtesy of the Chicago Architectural Photographing Co.).

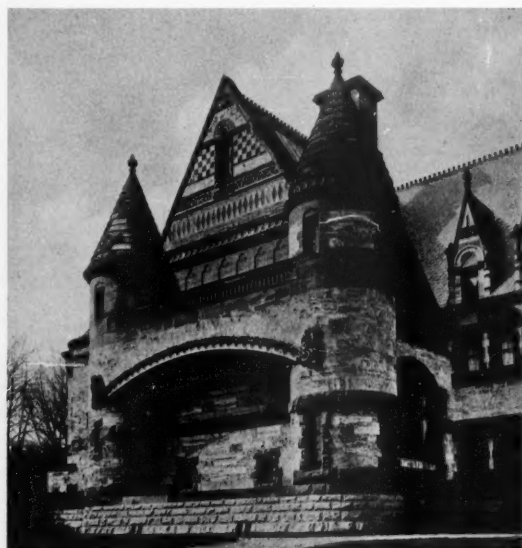


3. 'Lululand' Drawing Room, 1890-1894, by Herkomer (from Baldry, *Hubert von Herkomer*).

which the genius of the architect may to some extent be gauged'.<sup>2</sup>

Herkomer had met Richardson in Boston in 1886. In exchange for a portrait of himself by this Royal Academician, Richardson supplied Herkomer with an elevation for a large country home. It was erected in Bushey, Hertfordshire, England, in 1889-1890 and Herkomer moved in with his family in 1894. Although, as Hitchcock has correctly stated,<sup>3</sup> 'the executed detail was largely re-designed by Herkomer', nevertheless the result preserves Richardson's 'largeness of conception, massiveness and unity' (fig. 2).<sup>4</sup>

The building was named 'Lululand' after Herkomer's first wife. On the interior (fig. 3) the abundance of naturalistic ornament obscures structural organization. Only the painter's studio remained relatively uncluttered. A frieze in the dining room of painted stucco by Herkomer combines this artist's obvious symbolism with his own version of Art Nouveau (fig. 4). These interiors no longer exist. According to Pevsner, 'Of Sir Hubert von Herkomer's, the celebrated portrait-painter's, house, only the entrance survives. It must at all costs be preserved, as it is the only European work of the best American later 19th century architect, H. H. Richardson.'<sup>5</sup>



2. 'Lululand' for Hubert von Herkomer, Bushey 1889-1890, by H. H. Richardson (from A. L. Baldry, *Hubert von Herkomer*).

2. Horace Townsend, 'H. H. Richardson, Architect', *The Magazine of Art*, xvii (1894), 133-138.

3. Henry-Russell Hitchcock, Jr., *The Architecture of H. H. Richardson and His Times* (New York, 1936), p. 284 and fig. 139.

4. Hubert von Herkomer, *The Herkomers* (London, 1910-1911), and F. Saxon Mills, *Life and Letters of Sir Hubert Herkomer* (London, 1923).

5. N. Pevsner, *Hertfordshire, The Buildings of England* (London, 1953), p. 77 and pl. 61.



4. 'Human Sympathy', painted stucco frieze for 'Lululand' Dining Room, 1894, by Herkomer (from Baldry, *Hubert van Herkomer*).

Herkomer's art school at Bushey was a popular meeting place for young artists in England in the 1890s. Herkomer and his students produced elaborate theatrical performances, and Bushey was then within commuting distance from London. The English architect and designer, Charles F. A. Voysey, who has been characterized as an important forerunner of the modern movement, designed at least two residences constructed at Bushey in the nineties and built his own home in 1900 at Chorleywood, only a few miles away. The painters James Pryde and William Nicholson met at Bushey in 1893. Pryde, a native of Edinburgh, was a close friend of the Glasgow architect, Charles R. Mackintosh, whose Art Nouveau style was greatly admired on the continent. Pryde and Nicholson, as the 'Beggartaff Brothers', established a reputation in London as designers of posters. They introduced stencil techniques for achieving striking effects with vivid colors and simplified shapes.<sup>6</sup> Although there is no clearly demonstrable American influence in the work of these artists, they all must have been familiar with Richardson's 'Lululand' as a symbol of unconventional originality.

In October 1891 a third Englishman came to the United States to look at contemporary American art. This was the designer and decorator, Walter Crane, the president of the Arts and Crafts Exhibition Society. He remained in this country until May 1892. While in Boston, Crane met George Peabody of the firm of Peabody and Stearns. This architect, who was a close follower of Richardson, took Crane on a tour of Newport, Rhode Island. Crane was particularly anxious to see the house called 'Vinland' which had been designed for the American heiress and art patron, Catherine Lorillard Wolfe by Peabody and Stearns

6. Derek Hudson, *James Pryde* (London, 1949), and Marguerite Steen, *William Nicholson* (London, 1943).

and which, in 1882, had been provided with interior decorations including paper and hangings by William Morris, a window by Burne-Jones, and a stucco frieze by Crane illustrating Longfellow's 'Skeleton in Armour'. This, the Lorillard home, burned the following year. While in Chicago, Crane resided at the newly completed Auditorium Hotel, the work of Adler and Sullivan. In the first published account of his trip in *The Art Journal* in 1900, Crane makes no comment about his opinions of American architecture, but he must have been sufficiently impressed to tell his friends and associates about what he had seen.<sup>7</sup>

When the Paris art dealer and critic, Samuel Bing, came to America in 1892, he proceeded to publish a book on the subject. This appeared in 1896 as *La Culture Artistique en Amérique* and was distributed from Bing's 'Salon de l'Art Nouveau', where American decorative art was featured as equal to that of France or England.<sup>8</sup> Although it contains no illustrations, Bing's book is a remarkably thorough survey of American art with its main emphasis on architecture. He sees American art at its best in this form. As the three most important buildings in America he selects the Allegheny County Court and Jail by Richardson, the Albany State Capitol by Eidlitz and Richardson, and the Chicago Auditorium by Adler and Sullivan. He warns America that its 'historical base' is the greatest threat to its architecture and sees the small New England railroad stations by Richardson as the promise for a great future.

Bing's views were supported by the French silversmith, André Bouilhet, who came to the Chicago Fair in 1893, met Louis Sullivan and wrote a long letter home full of praise for the new American style. This was published within the year in the *Revue des Arts Décoratifs*, illustrated with photographs of the Auditorium, the Transportation Building, and the Getty Tomb, all by Sullivan.<sup>9</sup>

Interest in American architecture begins to appear in European buildings shortly before 1900. The first elevation in 1896 for the Whitechapel Art Gallery by C. Harrison Townsend (fig. 5) is more Richardsonian than the completed building. Giedion has already noted the appearance of Richardson's influence in the work of H. P. Berlage in Holland.<sup>10</sup> This is particularly evident in his Kerplein's Store, The Hague, 1895, and in his Amsterdam Stock Exchange, 1898-1903. It is also safe to assume a knowledge

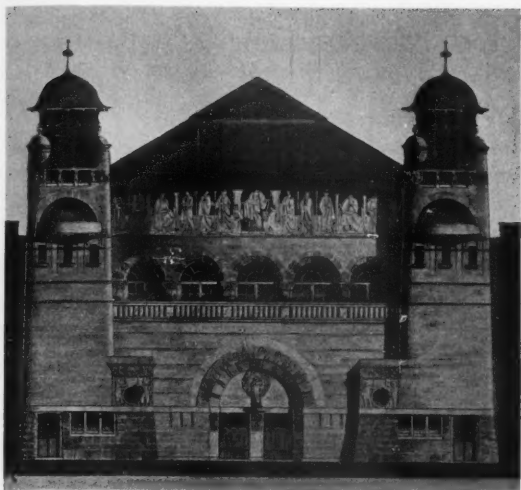
7. Walter Crane, 'The Work of Walter Crane', *The Art Journal*, Annual 1900, and *An Artist's Reminiscences* (London, 1907).

8. Robert Koch, 'Art Nouveau Bing', *Gazette des Beaux-Arts* (1959), pp. 179-190.

9. André Bouilhet, 'L'Exposition de Chicago, notes de voyage d'un orfèvre', *Revue des Arts Décoratifs*, xiv (1893), 65-79.

10. Sigfried Giedion, *Space, Time and Architecture* (Cambridge, 1947), pp. 235-236.





5. Whitechapel Art Gallery, elevation, 1896, by C. H. Townsend (from A. Koch, *Academy Architecture and Architectural Review*, Vol. IX, 1896).

of both Richardson and Sullivan for the work of Joseph Olbrich in Vienna and Darmstadt after 1898.

European artists found in the architecture of Richardson and Sullivan a trend toward unity and continuity of form which was a welcome turn away from the picturesque eclecticism of the Victorian style. As Carroll Meeks has correctly indicated, 'the weary eyes of Europe focused on our buildings. There may therefore have been a backwash from the tide that hitherto had been sweeping so steadily westward. . . .'<sup>11</sup>

11. Carroll L. V. Meeks, *The Railroad Station* (New Haven, 1956), p. 136.

## Cyclone Barn, about 1920

Architect Pierre C. Zoelly of Ohio State University and Zurich recently sent in a photograph of an old barn which makes us think of some churches now going up around us. He writes:

The tent-shaped barn which interests you is called a CYCLONE BARN for its resistance to hurricanes. It is of partly pegged timber construction and was designed for loose hay storage, about 35-40 years ago. It accommodates livestock on the ground and has feeding troughs along the low sides.

It is located on Highway 3, about 3 miles north of Washington Courthouse, Ohio. Original owner was a Mr. Wilson—present owner is his son, who is in the process of building a new pole barn in its stead for better storage of baled hay, and who intends to tear the old one down in the near future. As everything which has merit and originality, this thing seems to have to go too!



## BOOKS

Edith Eudora Kohl, *Denver's Historic Mansions: Citadels to the Empire Builders* (Denver: Sage Books, 1957), 263 pp., illus. \$5.00.

The history of architecture in the United States, particularly of the western part, has many lacunae. The student interested in this area feels a sense of pleasant anticipation when a book of regional studies is announced with a title such as this one. Only the publication of more local studies will make possible general treatment of the development of architecture in our western states, which is much to be desired.

Unfortunately the pleasant anticipation aroused on hearing of this book is destined to be dispelled upon reading it. The reader is more likely to be left with a sense of disappointment and regret. The basic historical information such as the dating and authorship of the buildings is scant at best. The architectural descriptions are so confused and garbled that they fail completely to describe the designs of the houses. The general tendency leads to such doubtfully humorous descriptions as that in which a dentil course is referred to as a 'design called the "dental block"' (p. 111). The language is both colloquial and not altogether grammatical. The general character can be illustrated by the following passage describing the equipment of the Hallett House.

'Without conformity to period or country, the gorgeously decorated house held a collection of antique furniture and art rarely equaled in beauty and value. There were pieces that dated back to the American revolution and furniture from the palace of Louis IV [sic].

'A desk and matching console that once had graced the boudoir of Marie Antoinette had cost \$25,000. They were of rosewood, with doors paneled in steel, and with secret compartments. An estagere [sic] (what-not) of the 1600's; the handsome library had precious trophies, steel engravings, paintings on rice paper, and a collection of original copies of valuable books' (p. 95).

The desk which is said to have been the property of Marie Antoinette is illustrated on page 98, and there is raised in price to \$75,000 alone. As far as one can tell from the photograph, it appears to be a rather typical nineteenth-century piece. (Perhaps we are wrong in thinking that the Marie Antoinette referred to above was the famous queen of France.) No illustration of the Louis IV [sic] piece is given, but we are told on page 97 that it is a couch.

Another typical paragraph describes the architecture of the Fisher House as follows: 'In contrast to Denver's craggy-walled castles, the Fisher mansion was an early American Colonial style, straightlined, with huge Grecian columns extending from the first floor portico to the roof. It was built of Coal Creek lava, a highly polished stone quarried near Denver. Relieving the austerity were insets of hand-carved stone of contrasting color and artistic designs. The windows and the huge arched front door were of triple-plate glass. The carved

lions, one on each side of the front portico, were like guards to the exclusiveness of the private and social life within those walls' (pp. 53-55). What sort of an image would the reader get from this description if there were no photograph?

It would be pointless to try to enumerate the faults of fact and language. Some allowance for the style must be made since these essays were published originally in serial form in the Sunday magazine section of the *Denver Post*. On the dust jacket there is the statement that they were then in an 'earlier form'. It is to be regretted that they were not more carefully revised.

The book is illustrated with photographs taken by Orin A. Sealy of the *Denver Post*. These enable the reader to gather some idea of the architecture, which would be hardly possible from the text alone. In terms of style, most of the houses could be described as either 'Queen Anne', 'Richardsonian', or 'Colonial Revival'. Some of the later ones fall naturally into the category of 'period' architecture of the early twentieth century. The range in date extends from the 1870s to the early 1930s. It is unfortunate that more of the houses could not have been photographed in winter as in many examples the dense foliage almost completely obscures the building. The interior views are too often limited to particular features from which it is impossible to form an idea of the general feeling. There is one plot plan of a portion of the city, but there are no plans or other architectural drawings of the houses.

In the photographs the houses seem to show a solid and substantial, even rather modest, exterior architecture which does not always suggest the ostentatious display of great wealth mentioned in the text. Neither do there seem to be any characteristics that would point to the development of a local style. Reference to a 'Denver-style' is made in the text (p. 151), but the photographs do not show features which could not be paralleled elsewhere. The widespread use of ornamental stone lions may not be unique to Denver, but it does appear that the taste for them was more in evidence here than in other cities.

There is much anecdotal and genealogical material included with the descriptions of the houses. This is the most interesting part of the book. It is presumably more accurate than the architectural description, since many of the descendants of the original owners and builders are still living in the Denver area, sometimes in their ancestral residences. It is somewhat remarkable that so many of these large, late nineteenth-century houses are still used as residences, or, if used for other purposes, that they still retain so much of their original interior decoration.

The history of the families who built and lived in these mansions is absorbing. Among them are many of the great names in the development of the West. It is only to be regretted that the style is not more sophisticated and that the architectural character is not more correctly defined.

M. D. ROSS  
University of Oregon

Rosamond Randall Beirne and John Henry Scarff, *William Buckland, 1734-1774, Architect of Virginia and Maryland* (Baltimore: Maryland Historical Society, 1958), 175 pp., 69 figs. \$7.50.

Probably the most difficult task the historian of eighteenth-century architecture can tackle is to attempt to ascribe architectural works stylistically. As those who have tried to match up designs in the handbooks with existing architectural details well know: exact correspondence with a specific plate is almost unknown, close affinities are also rare, generalized influence seems to be the rule. A moulding from this plate, a bracket from that one, re-combinations, markedly altered proportions, are what we find. All of this falls within very narrow limits, so that while family resemblances are exceedingly close, exact lineage is not to be traced. The 'treasures' did not supply coins but credit to be drawn on as or when needed. A similar paradox occurs in the work of specific architects and joiners like Buckland, Arris, or Spratz. The vocabulary and the grammar often seem to be identical, yet there are so many diverse inflexions, accents, lisps, or stammers as to imply scores of individual voices. Elements which are here ascribed to Buckland on stylistic grounds could just as well be some one else's. Even in the works most clearly documented as Buckland's, there is enough variation to suggest that the 'London carver' on his staff and others of his workmen might have had full responsibility. Unless far more detailed records turn up, which seems improbable, we must be content to admire and enjoy and forget about the fascinations of attribution.

From the evidence herein of owner-designed mansions, changes of ownership, program, and workmen, one may conclude that most of this work, elegant as the joinery may be, was not often under the direction of a major architect. There is evidence for this conclusion in the insensitive handling of proportions, inharmonious manipulation of scale, or unsubtle building up of climaxes. Too commonly we find the 'smart' use of a feature like the Gothic porch at Gunston Hall, the unhappy repetition of broken pediments at Elmwood, the conjunction of heavy porch and light Palladian window at the Ridout House, and the numerous awkwardnesses on the rear of Whitehall. The Chase-Lloyd House has two striking weaknesses: the mishandling of the four-storied central bay's accents and the monstrous window and door combination on the rear façade. The chimney breast in the Brice House is almost overwhelmingly splendid but upon analysis seems to be a forced combination of several contradictory ideas. Features like these reveal a fundamentally unarchitectonic approach to the problems of design, such as a mature, experienced architect would not have permitted himself, but which are somewhat in character with the five-column portico in the background of the Peale portrait. An intentional comment on Peale's part? Then there are the unsupported twin elliptical arches at Gunston Hall and Tulip Hill, and the mahogany balusters on the stair at Montpelier, all weak where they should be strong. There is also the way in which some heavy elements seem to 'float', as the Palladian window in the rear of the Chase-Lloyd House, and the overmantels in the Hammond-Harwood and Paca Houses. They are just peculiar enough to be due to lack of skill, rather than to an excess of it, as was the case in genuine Mannerist treatments.

It is customary to overlook such departures from eighteenth-century convention out of chauvinism or else to admire them as part of some mysterious 'adaptation to local conditions'. The latter explanation would be acceptable, if it was understood to mean the inevitable consequences of the lack of skilled architects and the absence of skilled critics, not necessarily a blameworthy phenomenon but one to be regarded with sympathetic understanding.

All of these observations come as the result of reading a beautiful, informative volume which is a 'must' for anyone interested in the eighteenth-century architecture of this country or in the pre-revolu-

tionary history of Virginia and Maryland. Documents, anecdotes, details, facts, and illustrations combine gracefully to limn a picture of a many-textured society. In spite of the implication of the title, the authors are scrupulous not to claim full architectural status for their subject. Only in moments of understandable enthusiasm do they venture to ascribe works to him for which the evidence is tenuous. Usually with admirable restraint, Buckland's known and attributed works are carefully distinguished and the extent to which he was involved is clearly defined. Buckland's indenture of apprenticeship to a joiner for seven years and his indenture of service to Thomas Mason, his life as a free man, his library, his family, his debts are tidily connected. We are shown that Buckland was primarily a joiner, that he primarily conducted a joinery business, that he sometimes acted as an architect in completing another's building, and that he still more rarely provided a whole scheme, as for the Hammond-Harwood House, the one chosen for depiction in the portrait by Peale. From a humble apprentice he came by the end of his forty years to be called 'gentleman' and 'architect'. An Horatio Alger story of the eighteenth century, when such stories may have been as common as in the nineteenth century.

A few suggestions to be borne in mind when others come to produce such useful books, to make them still more useful: cross references from the text to plates are needed in books which are likely, as this one is, to be used as a reference work; plans without scale marks are incomplete; architectural terms that are excessively rare should be defined or authority for their use given; in biography the ascription of presumed motives is generally to be avoided. Some historians will doubt that Scamozzi was the first to use an Ionic capital with a volute at forty-five degrees, or that Montpelier shows 'features surviving from Tudor times'. None of these quite minor points must be allowed to detract from the sterling features of a valuable, scrupulous, interesting addition to our knowledge of the colonial architecture of the eighteenth century.

CARROLL L. V. MECKS  
Yale University

D. T. Devendra. *Classical Singhalese Sculpture, 300 B.C.-A.D. 1000* (London: Alec Tiranti, 1958), 47 pp., 128 figs. 30s.

The great art of Ceylon has been too little known and one hopes that this unpretentious but reliable introduction by the island's former Assistant Archaeological Commissioner will serve as an inducement to future tourists to extend their itineraries beyond the modern cities of Colombo and Kandy to the ancient capitals of Anuradhapura and Polonnaruwa and the ruins of Mihintale. The excellent photographs give a splendid idea of the richness and variety of the sculptures adorning the staircases, plinths, and thresholds of ruined shrines and palaces at these sites, but unfortunately there are no illustrations of the buildings themselves, and one must hope for a companion volume, giving plans and photographs which would allow us to place these magnificent carvings in their proper context.

PRUDENCE R. MYER  
Newcomb College  
Tulane University

Herbert A. Claiborne, *Comments on Virginia Brickwork before 1800* (Boston: The Walpole Society, 1957), 48 pp., 91 photos, 15 dwgs. \$5.00.

Although brick buildings were in the minority in seventeenth- and eighteenth-century Virginia, there was always enough demand for the bricklayer's services to make his craft a vital and developing one. Even in frame buildings, foundations and chimneys were normally of brick—at least in Tidewater, where the shortage of stone led to the frequent use of brick for steps and paving too.

This posthumous work of the late Herbert A. Claiborne treats of brick buildings only. The limitation rules out any discussion of the subtleties of those fascinating pieces of abstract sculpture, as they often are—the outside chimneys of frame houses. Nevertheless, there are notes on the brickwork of fifty-six buildings, and photographs of the brickwork of fifty of them, and that is a feast in comparison with what anyone else has offered on the subject. The book is in four sections: first a nine-page introduction, then the notes on individual buildings, then the plates, and finally drawings of the various bonds, water-table mouldings and the like. The notes follow a standard arrangement, under the headings of brick size, bond, water table, belt course, rubbed brick, and arches. Systematic comparison is thereby made easy, and in future it will be rash to generalize about the use of glazed headers in Virginia, for example, or of rubbed brick in quoins and jambs, without consulting Claiborne's *Comments*. The fruits of first-hand observation in this section are what gives the book its value. Information not derived from study of the buildings themselves is not so reliable. Dates, for instance: Jamestown church tower should be dated 1699, not 1635, King William courthouse c. 1735, not c. 1725, the President's House at William and Mary 1732, not 1723, Vauter's church 1719 and 1731, not 1731 *tout court*, the Wythe House at Williamsburg c. 1750, not c. 1775. And in the statement in the introductory chapter that 'the brick for each colonial structure was nearly always burned at the site' one should substitute 'each major colonial building' for 'each colonial structure'. As plantation accounts show, a planter who was making bricks for his own use might sell considerable quantities to neighbors and to building tradesmen, and these bricks must have found their way into buildings for miles around.

The book is pleasantly produced and the Meriden Gravure Company has done an excellent job with the photographs. An odd feature of the arrangement of the text is that the notes start with Abingdon church and proceed to Wilton, alphabetically, and then return to A with the Ambler house and work through the alphabet a second time with a different set of buildings. More annoying is the absence of cross references between the text and the plates. Since the latter have no captions or titles, but only numbers, the only key to their subjects is in the table of contents. However, this editorial shortcoming can be made up with a pencil, and the student of colonial architecture will think the book well worth that much trouble.

MARCUS WHIFFEN  
Colonial Williamsburg

## Periodicals Received

*Journal of the Royal Society of Arts*, London.

No. 5030, Jan. 1959.

No. 5031, Feb. 1959.

No. 5032, Mar. 1959.

## Books Received

(Mention of a book here does not preclude its subsequent review.)

Henrik Bramsen, Marianne Brøns, and Bjørn Ochsner, *Early Photographs of Architecture and Views in Two Copenhagen Museums* (Copenhagen: Thaning and Appel, 1957), 92 pp., 47 pls.

A selection of the 70,000 early photographs in the Library of the Royal Academy of Fine Arts and the Department of Maps and Prints of the Royal Library, Copenhagen. Primarily interesting as examples of photography, they sometimes show Egyptian and Roman buildings before later restoration.

Basil F. L. Clarke, *Anglican Cathedrals Outside the British Isles*, foreword by John Betjeman (London: Society for Promoting Christian Knowledge, 1958), 221 pp., 136 figs. 45s.

Peter Ferriday, *Lord Grimthorpe 1816-1905* (London: John Murray, 1958), 230 pp., 8 pls., 3 figs. 21s.

A biography of the controversial figure, Edward Beckett Denison, who is remembered for his part in the installation of Big Ben and the restoration of St. Alban's Cathedral.

Alan Gowans, *Looking at Architecture in Canada* (New York, Oxford University Press, 1959), 232 pp., 137 figs. \$10.00.

Hanno Hahn, *Die Frühe Kirchenbaukunst der Zisterzienser*, Frankfurter Forschungen zur Architekturgeschichte I (Berlin: Verlag Gebr. Mann, 1957), 378 pp., 200 figs. 48 DM.

Louis Labeaume, *Our Architectural Confusion* (New York: Vantage Press, 1959), 128 pp. \$3.00.

Annette Laning, *Lascaux Paintings and Engravings* (Baltimore: Penguin Books, 1959), 202 pp., 48 pls. \$1.25.

Thomas Paulsson, *Scandinavian Architecture. Buildings and Society in Denmark, Finland, Norway and Sweden from the Iron Age until Today* (Newton, Mass.: Charles T. Branford Co., 1959), 250 pp., 120 pls., 80 figs. \$7.50.

Henry Hope Reed, Jr., *The Golden City* (Garden City: Doubleday and Co., 1959), 160 pp., 86 figs. \$5.75.

Primarily a pictorial argument for the return to the use of classical forms in architecture and civic design. The very carefully selected plates comparing academic and contemporary buildings occasionally support the thesis, but more often than not prove exactly the opposite.

## S.A.H. NEWS

*Bibliography of the Works of Fiske Kimball* by Mary Kane, edited by Frederick D. Nichols, will be published this spring by the Bibliographical Society of the University of Virginia. The book sells for \$3.50, but members of the Society of Architectural Historians, which sponsored the publication, may buy it for \$2.50 from the University of Virginia Press, Charlottesville.

Corrections: March 1959 issue.

Page 14, insert the following between lines 21 and 22 in the left column: 'project. This model must be presumed to have existed at'.

Page 35, column two, line 39, 'Viollet-le-Duc' should read 'L.-J. Duc'.



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